

# The Boston Medical and Surgical Journal

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MARCH 6, 1919

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## Original Articles.

### PNEUMONIA AND EMPYEMA.

BY 1ST LIEUT. HORACE GRAY, MEDICAL CORPS, U. S. ARMY.

[From Medical Service, Base Hospital, Camp Devens, Mass.]

1. *Sources of Data:* Clinical Records (Form 55), Autopsy Records, Medical History of the Post, and data collected by Major P. G. Woolley in several recent reports to the S.G.O.

2. *Period Considered:* From Sept. 27, 1917, through May 31, 1918, i.e., 35 weeks.

3. *Cases Considered:* 485 admissions, including (a) two of empyema in which no pneumonia was recorded; and (b) ten of pneumonia (6 lobar and 4 bronchial, with no deaths) associated with signs of chronic tuberculosis; but excluding (c) cases frankly diagnosed "tuberculosis" with only a later diagnosis of pneumonia; only one of these showed tubercle bacilli in the sputum. The sputum of all pneumonias has been examined for tubercle bacilli routinely, and in suspicious cases repeatedly (i.e., daily for 3 days; and often later again for 3 days). In this connection the following recent authoritative statement with reference to a reported case of pulmonary consolidation is pertinent: "If the sputum had not been examined for

tubercle bacilli, the diagnosis of acute lobar pneumonia with beginning resolution of a consolidation. . . and recovery by lysis would have been made. . . Tuberculous pneumonia is tuberculous from the start and not secondary to a pneumonia caused by some organism." (Longcope, W. T., "Medical Clinics of North America," November, 1917, I, 469); (d) one case of cerebro-spinal meningitis with secondary pneumonia; (e) one case of diphtheritic throat paralysis with terminal bronchopneumonia; (f) one traumatic punctured wound of the thorax with terminal pneumonia.

4. *Incidence and Mortality:* The usual proportion of the camp population to be sick with pneumonia has been 1.4% (or as technically expressed in the army: "annual pneumonia morbidity rate per 1000—14.3). As the parallel non-effective rate from all causes has been 31.5 p.m. it would appear that 14-31 or 45% of the sick days during this time has been due to pneumonia.

The pneumonia mortality has been only 13% of 485 cases. This rate, roughly only 1/2 that of civil statistics (20-27%, Norris in Osler-McCrae, I, p. 270.) is due to: (a) the present day apparent increase in the incidence of pneumonia as of other diseases. In pneumonia, this is owing to more accurate diagnosis (credit largely to the x-ray department) and to more

careful reporting of those diagnoses as made; (b) in type I cases the earlier administration of serum; (c) in all cases, the tendency to earlier admission to hospital of suspicious cases for observation, with the resulting prevention of the damage done by overwork and exposure to early ambulant cases (such as reg. No. 8920, who complained of pain in the side for 3 days before being sent to the hospital, and who later died here).

The frequency of empyema in pneumonia has been 16%.

The mortality in 77 cases of empyema has been 44%; but the mortality of cases that were operated on was only 21% vs. 74% for the non-operated, so that we feel that the total death rate may be lowered in future. This will be referred to again further on in Par. 39, on the Value of Operation.

TABLE I.

PERIOD OF 35 WEEKS FROM SEPT. 27, 1917, TO MAY 31, 1918, INCLUSIVE.

Average strength of command .....	29,613
Cases of pneumonia .....	485
Annual pneumonia morbidity rate per 1000 .....	14.3
Annual non-effective rate all causes per 1000 .....	31.5
Pneumonia morbidity, per cent. of total non-effectives .....	45
Deaths from pneumonia .....	64
Annual pneumonia mortality rate per 1000 .....	3.2
Pneumonia case-mortality, per cent. ....	13
Cases of empyema .....	77
Deaths from empyema .....	34
Empyema case mortality, per cent. ....	44

5. *Rank:* Enlisted men had a pneumonia morbidity rate nearly 4 times that for commissioned officers, as might be anticipated. Furthermore, mortality and empyema happened to occur only in the former group. The greater immunity of officers is probably due (a) to seasoning in service at Officers' Training Schools, (b) in a lesser degree to better physique; (c) possibly to less prolonged exposure to wet and possibly greater facility in getting dry clothes afterward, and (d) possibly to less crowded quarters.

In answer to any who may feel that such health conditions are unjust to the enlisted men, attention is drawn to the reverse military conditions: "Statistics show that in battle the percentage of casualties is much higher among the officers than among those in the ranks." (Andrews, Capt. L. C., U. S. Army, "Fundamentals of Military Service," Phila., 1917, p. 91).

Of the 8 officers half were medical men (inci-

dentally all serving in this Base Hospital), half were line men. All recovered. Considering the average number of medical officers on duty in the hospital and the line officers in camp, the former showed about twenty times as much pneumonia. It is worthy of note, however, that no medical officer, nurse, or orderly serving on a pneumonia ward developed pneumonia.

TABLE II. RANK.

PERIOD 35 WEEKS FROM SEPT. 27, 1917, TO MAY 31, 1918, INCLUSIVE.

Average strength of command .....	29,613
Commissioned officers .....	1,778
Enlisted men .....	27,835
No. cases pneumonia among { Officers .....	8
Enlisted men .....	477
Annual pneumonia morbidity { Officers .....	6.7
per 1000 { Enlisted men .....	25.5
Pneumonia morbidity rate among men is 3.8 times that among officers.	

6. *Organization.* The part played by the organization in pneumonia incidence has been discussed in a recent epidemiological report by Major Woolley. The mortality is highest among cases from the Field Artillery: 16%, then 14% each for the Infantry and for the Depot Brigade, 13% each for the Machine Gun Battalions and Engineers, 10% for miscellaneous, and 0 for the Ambulance Companies, Field Hospital, and Base Hospital.

7. *Racial Incidence.* Incidence of pneumonia: The negroes contributed 30% of the entire 485 cases; but when we recollect that the first negro was admitted March 31st, we find that they contributed 61% of the 245 cases from that admission through the end of this series on May 31. When one further considers the relative black and white population in this cantonment, the greater incidence of pneumonia is appalling. This feature has been reported in detail by Major Woolley, but it may be briefly summarized as follows: During the two months of April and May, during which occurred the negro influx, the annual morbidity rate per 1000 was 3501 vs. W. 13, or more popularly expressed the negroes had 39 times as much pneumonia (estimated, of course, as if there were an equal number of each in camp) as the white men. Major Woolley has calculated that if the morbidity rate for the negroes had existed among the white men of the camp, there would have been nearly 3000 cases of pneumonia among them. The causes were probably two: exposure incident to change of climate, and overcrowding,

especially damaging to men used to the roomier life of the country.

The mortality from pneumonia, however, was only slightly higher among the black men, 16% *vs.* 12% for the whites.

The kind of pneumonia was lobar in 94% of the black cases, but in the whites only 74%. The mortality was practically the same (15-18%) in the negro lobars, negro bronchios, and white bronchios, while the white lobars showed (9%) only half the rate. It seems as if the blacks collapsed with any pneumonia, while the whites had a fair show unless they got the streptococcus.

The incidence of empyema among the negroes was about one-third that of the whites in lobar pneumonia, and about one-half in bronchopneumonia. Apparently the negroes died too early in the disease to develop empyema.

The mortality, however, among negroes having empyema was vastly higher, 89% *vs.* 38%, again a seeming lack of resistance.

TABLE III. NEGROES AND WHITE.

		PNEUMONIA				EMPYEMA			
		No. cases	No. pneum. died	Per cent. pneum. died	No. cases	No. empy. died	Per cent. empy. died	No. cases	No. empy. died
White	Lobar	246	23	9	52	21	13	25	25
	Broncho	89	18	18	14	16	11	79	79
	Empyema*	2	2	100	2	100	2	100	100
		337	41	12	68	20	28	38	38
Black	Lobar	137	21	15	8	6	7	87	87
	Broncho	11	2	18	1	9	1	100	100
		148	23	16	9	6	8	89	89
TOTAL		485	64	13	77	16	34	44	44

\* Without pneumonia.

8. *Length of Service.* Seasoning has decreased the incidence of pneumonia here as in previous statistics on South Africa and elsewhere (Lord, F. T., "Diseases of the Lungs," Phila. & N. Y., 1915, p. 157). Of this series, 50% had been in service 1 month or less, while only one other monthly period showed as high as 10%, namely, patients in service for about six months.

The mortality on the other hand, to our surprise, was lower in the unseasoned men. The smallest case mortality was among pneumonias who had been in service for 2 months, 10%; next in those of 1 month's service, 14%; while the death rate in other months varied from 19-22%. It really seems as if this must be a case of "how statistics can lie!"

TABLE IV. SERVICE.

		CASES OF PNEUMONIA DEAD IN EACH PERIOD.			
LENGTH OF SERVICE (NEAREST UNIT OF TIME)		No.	Per cent.	No.	Case mortality Per cent.
1 week	59	12		13	20
2 weeks	50	10		9	14
3 weeks	18	4		3	5
1 month	115	24		10	16
2 months	38	8		4	10
3 months	32	7		7	22
4 months	38	8		8	21
5 months	42	9		4	21
6 months	47	10		3	21
Over 6 months	39	7		3	19
Unknown	5	0		0	0
Civilians	5	0		0	0
Total	485			64	

9. *Alcohol* cannot be said, from the figures available here, to increase the frequency of the mortality of pneumonia. Furthermore, the figures available are hardly reliable owing to the well known fear among the men that admission of the use of liquor may result in penalty. If we might judge by the following analysis of pneumonia histories, referring to habits prior to army life, temperance is spreading among young men of the 3rd decade more rapidly than has been generally believed: "considerable," 2%; "moderate," 25%; "very moderate or occasionally," 8%; "rare or none," 65%.

10. *Gas*, lachrymatory, seems to have played as negligible a part in the causation of pneumonia here as has been reported abroad with reference to T.B. Of 164 cases on which data were secured, 62% had not had gas at all, and only 23% had had it within a month of onset of the pneumonia. More figures are desirable.

11. *Previous Attacks of Pneumonia* did not, in this series, increase either the death rate, or the frequency of empyema. One or more previous attacks were here noted in only 12% of the 485 cases, and of this group 14% died, not materially higher than the general mortality rate of 13%. Of this group again only 12% developed empyema, not a greater proportion than the general empyema frequency in the whole series, 16%. Of these empyemas only 33% died, as it happens, lower than the general empyema death rate of 44%. The 4 patients with two or more previous attacks, furthermore, ran mild courses: (a) register No. 12677, claimed to have had three previous attacks of pneumonia, but his attack here was limited to the right middle lobe, and he had his crisis on the 4th day after onset. Incidentally the onset was abrupt with pleurisy pain and hemoptysis; (b) Three patients, regis-

ter Nos. 13239, 14173, and 14401, had each two attacks prior to the one which brought him into this hospital, and all 3 are doing well.

In only one of the fatal pneumonias did the previous attacks seem to play a definite part. Abstract of this case follows: Hospital Register No. 9353, a Sergeant in the Q.M.C., white, had his first attack of lobar pneumonia (side unknown) on August 26, when he was sent from the camp to the Burbank Hospital in Fitchburg. Later, after this Base Hospital was opened, he was transferred here, on Sept. 26. The record of this admission was lost during a fire in the Receiving Ward. After ten days he was sent out of hospital on furlough, and in another ten days back to duty. He remained well till his second attack of lobar pneumonia (left lower), Nov. 18 to Dec. 15; to duty, well. His third attack began with chest pain on March 10th; on March 12th he was admitted, with lobar pneumonia, type III, and died March 23rd. Both upper and both lower lobes were solid at necropsy.

12. *Classification of Pneumonia.* "It is customary to speak of lobar and bronchopneumonia. This distinction is useful from the standpoint of the pathologist, but how useful it is from an etiologic or epidemiologic viewpoint remains to be seen. Both forms may be primary and both may follow measles. It is generally believed that lobar pneumonia is more frequently primary, while bronchopneumonia is the far more likely to follow measles. However, up to the present there are no convincing statistics on this point." (Vaughan, V. C., *Journ. Lab. & Clin. Med.*, Jan., 1918, III, 253). Pathologically speaking, the three main kinds of pneumonia seen in this hospital have been lobar, broncho, and empyema without prior pneumonic consolidation. Lobar was nearly four times as frequent as broncho. Measles-pneumonias were by no means always bronchopneumonias, but were 24% lobars; of these 10 cases clinically lobar, three were proven at autopsy to be lobar, not confluent-lobular. Of all the lobar pneumonias 16% got empyema, as did practically the same, 15%, of the bronchopneumonias.

Compare with this high frequency of empyema the lower percentage of civil life: Norris gives 5% empyemas in lobar pneumonias. No similar figures have been accessible here as to the usual fraction of bronchopneumonia to get empyema, but apparently it is small, for out of

140 cases of empyema Lord found only four after broncho vs. 136 after lobar. The lobar-pneumonia-empyemas here had, however, less than half the death rate of broncho-pneumonia-empyemas.

*Etiologically* speaking, the three main kinds of pneumonia here have been primary, post-measles, and post-ether. Primary have made up 88% of the 485 cases, while only 8% have been consequent on measles. The measles-pneumonias have developed empyemas more than twice as often as have the primary pneumonias.

From the viewpoint of *mortality*, the highest among the pneumonias was post-measles, 32%, primary only 12% died, and post-ether one died, or 6%. Among the empyemas the measles-pneumonia-empyemas, furthermore, had more than twice the death rate of the primary-pneumonia-empyemas.

The many possible *etiological* subdivisions have, in this report, been consolidated into three classes: primary—88%, post-measles—8%, post-ether—4%, total, 100%.

While it is clear that pneumonia here has been essentially a primary disease, mention must be made of the inclusion under that heading of some cases which by more refined interpretations might be called secondary, rather than *associated* as we prefer to regard them: (a) *acute minor upper respiratory infections* (Rhinitis, pharyngitis, tonsillitis, laryngitis, even sinusitis) were disregarded, because: (1) Accurate data as to their presence had not been consistently recorded; nor, indeed, is it likely that satisfactory histories could be obtained here. (2) Further even where present, these complaints cannot be considered primary causes of pneumonia, for they have been extraordinarily frequent in healthy men. The tuberculosis examining boards have found high percentages of the examinees with these symptoms but with scant signs. How then can these histories be relied on? (3) "Laryngitis and bronchitis may precede or complicate lobar pneumonia. Bronchitis is practically always present, and it is often difficult to say at what point a bronchitis should be considered a complication or merely a part of the disease, it being largely a question of degree and of distribution." (Norris, G. W., in Osler and McCrae's "Modern Medicine," Phila., 1913, I, 248). Another authoritative statement to the same effect is: "The infection as well as the lesions is probably a descending one, and no sharp line can be drawn either in time or symptoms be-



tween the occurrence of the pharyngitis, laryngitis, bronchitis, and finally the bronchiolitis and bronchopneumonia." (Cole, R., Pneumonia at a Base Hospital, Jour. A.M.A., Apr. 20, 1918, 70, p. 1146.)

b. *Rheumatic Fever*: Two cases developed pneumonia (one lobar, one broncho) the first day of the rheumatic fever; one (lobar) on the fifth; one (lobar) on the seventh; one (broncho) on the sixteenth, and one (lobar) on the forty-second day. These six were considered associated rather than causal, because:

1. Conversely two men with pneumonia (lobar) developed rheumatic fever, on the seventh and fifty-first days. The pneumonia was presumably not the cause of the rheumatic fever.

2. The frequency of rheumatic fever and pneumonia and the rarity of their association: eight times in four hundred and eighty-five pneumonias, i.e., less than 2%.

c. *Scarlet Fever*: One case was considered coincident, inasmuch as its onset was accompanied by "pain in the chest" and "bronchitis"; and the patch of consolidation was found only on the seventh day of the disease; yet we know of simple pneumonias whose consolidation was diagnosed equally late or not at all.

d. *Parotitis*: One case was considered a coincidence rather than a cause, since it developed on the first day of the pneumonia. In the mumps ward a patient developed pneumonia

(lobar); this also was considered independent, in view of being the only one among mumps cases.

e. *Rubella*: One case developed on the fourth day of a pneumonia; this was considered a coincidence.

The etiology of 88% of the 77 empyemas was a primary pneumonia vs. a measles-pneumonia in 8%. When we recollect that primary pneumonias were in this series ten times as common as measles-pneumonias, we realize that we should, therefore, consider rather the converse of the first sentence of this paragraph, namely, the fraction of the primary pneumonias to develop empyema, compared with the fraction of the measles-pneumonias to do so. This was only 15% vs. 34%, hence the bad prognosis for measles-pneumonia.

TABLE V. THREE KINDS OF PNEUMONIA.

OF 485 PNEUMONIAS		OF EACH CLASS THIS PER CENT. GOT EMPYEMA	OF EACH CLASS THIS PER CENT. DIED
Of 485 pneumonias			
Primary* made up 88%.....	15	37	
Measles* made up 8%.....	34	79	
Post-operative* made up 4%.....			
Lobar .....	16	37	
Bronchial .....	15	80	
Empyema without pneumonia 00.4%			

\* Lobar or bronchial.

TABLE VI. THREE KINDS OF PNEUMONIA.

		PNEUMONIA							EMPYEMA								
		No. of Cases						Per cent. cases in each group	No. of Cases						Per cent. emp. in each group		
		1st 100	2nd 100	3d 100	4th 100	401-485	Total		No. dead	Case mortality per cent.	In 1st 100 pneumonia	In 2nd 100 pneumonia	In 3rd 100 pneumonia	In 4th 100 pneumonia		In pneumonia, 401-485	Total
Primary	Lobar	57	52	86	91	72	358	75%	41	11%	12	12	21	9	2	56	80%
	Broncho	14	33	12	3	6	68	14%	9	13%	3	2	1	0	0	6	10%
	Empyema	0	1	0	0	0	1	1%	0	0	0	1	0	0	0	1	1%
Total		71	86	98	94	78	427	88%	50	12%	15	15	22	9	2	63	82%
Measles	Lobar	6	2	0	1	1	10	24%	4	40%	4	0	0	0	0	4	29%
	Broncho	17	7	0	2	4	30	73%	9	30%	6	2	0	1	0	9	64%
	Empyema	1	0	0	0	0	1	2%	0	0	1	0	0	0	0	1	7%
Total		24	9	0	3	5	41	8%	13	32%	11	2	0	1	0	14	18%
Post ether	Lobar	5	3	2	3	2	15	89%	1	7%	0	0	0	0	0	0	0
	Broncho	0	2	0	0	0	2	12%	0	0	0	0	0	0	0	0	0
	Empyema	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		5	5	2	3	2	17	4%	1	6%	0	0	0	0	0	0	0
Total	Lobar	68	57	88	95	75	383	79%	46	12%	16	12	21	9	2	60	78%
	Broncho	31	42	12	5	10	100	21%	18	18%	9	4	1	1	0	15	19%
	Empyema	1	1	0	0	0	2	00.4%	0	0	1	1	0	0	0	2	3%
Total		100	100	100	100	85	485		64	13%	26	17	22	10	2	77	100%

(To be continued.)

## THE VENEREAL INFIRMARY AT CAMP HUMPHREYS, VIRGINIA.\*

By GEORGE G. SMITH, CAPTAIN, M. C., BOSTON.

NOVEMBER 26, 1918, the two venereal infirmaries which had been in operation at Camp Humphreys were consolidated. The building assigned to the new infirmary was situated at Belvoir, in close proximity to the Development Battalions which it was intended to serve. This building was of the old barrack type, 180 feet long by 21 feet wide. It was piped for sewer and cold water connections at one point.

As it was understood that the building was to be used for temporary purposes only, no more labor or materials were expended upon alterations than was absolutely necessary. The partitions dividing the structure into rooms were moved to give the arrangement shown in the accompanying diagram. At the easterly end of the building was an office in which the paper work was done; next to that was a room for the administration of salvarsan. The center room was arranged for a waiting room; it opened into the treatment room, which was 60 feet long. Beyond the treatment room were two small rooms, one of which was a laboratory, the other a smaller waiting room for outgoing cases. Each room was heated by a stove. Water was heated over an old stove resurrected from the scrap heap. Small oil stoves were used to heat the sterilizer.

The treatment room, 60 by 21 feet, was divided lengthwise by a railing. Along the left-hand wall were shelves for urine glasses (bottles which once held "Pin Money" pickles), and 12 feet of ordinary latrine troughs supplied with two faucets. Along the railing were placed 6 galvanized iron cans about 26 inches in height. Above the cans and above the troughs were Valentine irrigators  $2\frac{1}{2}$  feet apart. There were 17 in all.

That part of the room to the right of the railing contained three tables, one for dressings and two for sound cases, and two stoves. There were several small tables for records, instruments, and solutions, and a home-made cabinet for supplies.

The personnel consisted of 5 medical officers. Of these, one was in charge of the records, the attendance, and the administration of the clinic. Two examined patients and two others passed sounds, gave prostatic massage and did dressings. A sergeant was quickly trained to stain

smears and to examine them for pus and for gonococci. In doubtful cases his work was checked up by one of the medical officers. Another sergeant had charge of the supplies and of the enlisted personnel. There were two clerks, one for the office and one to check the attendance and give out records. Six enlisted men and a corporal were employed in the treatment room where they helped with dressings, attended to the irrigators, and made themselves generally useful. Most of these men were colored; they were obedient, quick to learn, and faithful. No trouble whatever was experienced from the mingling of the two races.

The patients treated at the infirmary were both white and colored. The great majority were from the Development Battalions, to which they had been transferred because of chronic venereal disease. Cases of urethritis in the Development Battalions were divided among 5 companies, 3 colored and 2 white. At one time there were about 500 under treatment. They reported every day except Sundays and holidays. Each company reported at a different hour under the supervision of a commissioned or non-commissioned officer. This man was held responsible for the attendance of his men. He had a list of the venereals in his company and every day checked it up with the roster maintained by the Infirmary. Upon the latter the daily attendance of every man was checked. Careful supervision of the attendance was made necessary by the careless attitude of some of the patients, who took every opportunity to escape treatment. This attitude changed, however, when it became known that a man had to be discharged from the Infirmary before he could get out of the army.

Daily reports were sent to the Personnel Officer and the Battalion Surgeons containing the names of patients discharged or admitted by the Infirmary.

The men entered the building by a door opening into the waiting room. They filed past a table and were given their record cards. At the same time the attendance was checked off. They passed into the treatment room, where a medical officer received the record and made what examination was necessary. Each patient urinated into two glasses, which he presented for inspection. The medical officer then indicated his treatment.

In all acute cases of venereal disease a Social Record was made. This questionnaire, which

\* Published by permission of the Surgeon-General of the Army.

was sent from the Surgeon General's office to all camps, read as follows:

**SOCIAL CASE HISTORY SHEET.**

Date \_\_\_\_\_  
 Diagnosis { Laboratory \_\_\_\_\_ M., S., or W.  
               { Clinical \_\_\_\_\_ Age \_\_\_\_\_  
 Patient's name \_\_\_\_\_ Rank \_\_\_\_\_ Reg. No \_\_\_\_\_ Unit \_\_\_\_\_  
 Date of admission \_\_\_\_\_  
 Date of exposure to infection and of first symptoms. \_\_\_\_\_  
 Source of infection (Woman's name and address if possible) \_\_\_\_\_  
 Would patient be willing to identify her? \_\_\_\_\_  
 Was she paid? (In any way, monetary or otherwise. State particulars.) \_\_\_\_\_  
 Ascertain all facts in reference to woman believed to be the source of infection. The following facts should be included.  
 Age \_\_\_\_\_  
 Social condition. \_\_\_\_\_  
 Occupation \_\_\_\_\_  
 Wage \_\_\_\_\_  
 Single, married, widowed, divorced. \_\_\_\_\_  
 Had either the patient or the woman believed to be the source of infection indulged in alcohol at the time of infection? \_\_\_\_\_  
 Did infection take place in a house of prostitution? (Give full particulars of all circumstances in connection therewith.) \_\_\_\_\_  
 What venereal prophylaxis was used and by whom was it administered? \_\_\_\_\_  
 How long after exposure was venereal prophylaxis used? \_\_\_\_\_  
 Do you know of other cases infected from the same source? \_\_\_\_\_

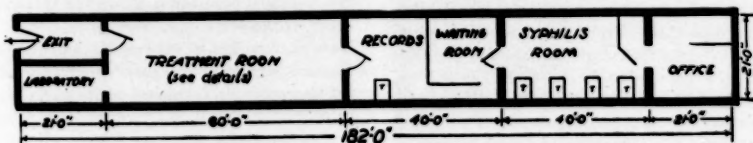
The Social Case Histories were sent to the Camp Surgeon, who informed the local Boards of Health of the presence in their territories of sources of infection, and instructed the patient's

commanding officer whether the man was subject to Court Martial for failing to take venereal prophylaxis. If the patient stated that he had taken prophylaxis, the truth of his statement could be verified by the records of the infirmary in which he claimed to have taken it. Beginning November first, 1918, all cases in Camp Humphreys who contracted venereal disease were liable to court martial, whether they had taken prophylaxis or not.

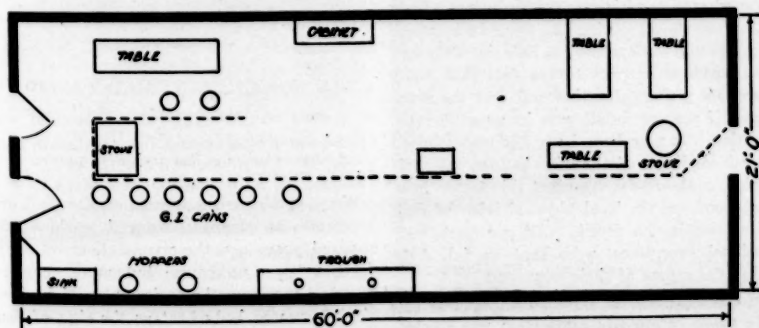
Statistics show that of 274 cases of venereal disease among white troops in the First Development Battalion, 84% were infected before entering the army. This fact is supported by the records of cases discharged from the Venereal Infirmary at Camp Humphreys during December, 1918. Approximately 80% of these were chronic. In the table which follows, the cases marked "observation" are those who were sent to the Infirmary with so few signs of disease that a definite diagnosis could not be made. Undoubtedly some of them had a slight urethritis, but they could be considered with the chronic cases rather than with the acute.

Cases discharged from the Venereal Infirmary during December, 1918:

Gonorrhea, chronic .....	327
Gonorrhea, acute .....	17
Syphilis (mostly chronic) .....	49



*PLAN OF VENEREAL INFIRMARY*



*DETAILS OF TREATMENT ROOM*

Chancroid .....	13
Observation .....	65
Phimosis .....	3
Circumcision wound .....	2
Stricture urethrae .....	4
Condylomata acuminata .....	4
Herpes progenitalis .....	2
Incontinence, urinary .....	1
Balanitis .....	3

Total number of cases ..... 490

The requirements for discharge in the case of patients with urethritis were: Absence of urethral discharge upon stripping the urethra, clear urine for at least one week, prostatic secretion in which there was an average of not more than two pus cells per field (oil immersion). A few cases with persistent mucoid discharge were declared free from venereal disease after at least 3 microscopic examinations of the prostatic and vesicular secretion showed (1) no gonococci, (2) no more than 2 pus cells per field.

Cases of syphilis were declared "available for transfer" after they had been given 6 intravenous injections of arsphenamin, usually 0.3 gram at a time, and mercury either by inunction or by intramuscular injection.

Urethritis was treated mainly by lavage of urethra and bladder with potassium permanganate about 1-8000 in strength. Valentine irrigators equipped with metal nozzles were used; the nozzles were boiled after each irrigation. In the more acute cases, anterior urethral injections of one of the silver albuminates were given by one of the attendants. Sounds and prostatic massage were employed, but to rather less extent than is customary in other clinics with which the writer has been connected. The amount of involvement of prostate and vesicles seemed less than is met with in such clinics as that of the Massachusetts General Hospital. The incidence of epididymitis was certainly less. Only 6 cases developed during the 6 weeks in which the Infirmary was operated at Belvoir. This may have been due in part to the fact that many cases were of long duration and that the gonococcus, if present at all, was in an attenuated condition. It may have been due also to good general condition of the men incident to their regular, outdoor life. To offset this factor, however, there was the hard physical labor of drill and of working on details. All our cases, with occasional exceptions, were kept on full duty during the course of their treatment.

In the treatment of syphilis, a diagnosis had to be made before any medication was started. Open lesions were sent to the Laboratory of the

Base Hospital for Dark Stage examination, as there was no electricity at the Infirmary during the day. If spirochaetae were found or if the blood showed a double plus Wassermann, treatment was begun at once.

The urine of each man was examined for albumin before each injection of arsphenamin. One case was found who developed albuminuria after one treatment. As he continued to have a large trace of albumin for a week, he was sent to the Base Hospital for further treatment.

Injections of arsphenamin were given in the late morning or in the early afternoon. The men were then sent to quarters and the next morning were put on full duty. Some 300 injections in all were given. Aside from the case of albuminuria mentioned above, there were no untoward results. With one medical officer mixing the solution and two others administering it by the gravity method, a considerable number of treatments could be given in an afternoon. 36 was the greatest number given on any one day, but more could have been handled with ease.

The chief interest in this study resides in the fact that really quite efficient treatment can be given with a comparatively crude equipment. With plenty of floor space and sufficient irrigators, a surprisingly large number of men can be treated. It was estimated that 200 patients per hour could have been cared for in the Infirmary at Camp Humphreys, had there been need.

The writer wishes to express his indebtedness to Captain Meylackson, whose Venereal Infirmary at Camp Meade furnished many suggestions of value, to Lt.-Col. I. W. Brewer, Camp Surgeon, and to Major Stephan Szumanski, Commanding Officer of the Development Battalions, for their coöperation, and to all the men, officers and privates, who worked for the welfare of the Infirmary.

### THE NORMAL ARTERIAL TENSION.\*

By CLAES JULIUS ENNEBUSE, M.D., CAMBRIDGE, MASS.

[Abstract of a paper entitled "Inquiry through Analysis of Measurements of the Maximum Tension of the Radialis Artery."]

WHAT is the normal arterial tension, and what constitutes an abnormal arterial tension? One hundred years ago the normal temperature of the body was unknown; but more than two thousand years ago the ancient physicians recognized increased body heat as the sign of acute

\* Paper read before the Boston Society of Psychiatry and Neurology, Jan. 17, 1919.

disease. Two hundred years ago the normal frequency of the pulse was only beginning to be recognized; but more than two thousand years ago the ancient physicians recognized the quick and the slow pulse.

The quality of the pulse, which now we call tension, was observed by the ancient physicians of the Far East, by the Chinese physicians who, more than 4,500 years ago, adopted the practice of feeling the pulse. But today, even after it has gone through the minds of generations of physicians for more than forty-five centuries, the ancient notion of pulsation has not been developed with sufficient clearness for literature to tell unanimously what constitutes the normal arterial tension.

Not many years ago, physiology, basing its teaching upon the mean of the bloodpressure in the larger mammals, taught us what the arterial tension should be; but of late physiologists have abandoned this deductive method and base their present teaching upon the results of clinical observations. Thus the determination of the normal arterial tension has left the domain of physiology as such and is today a purely clinical question.

The clinical answers to this question are varied at the present time; and values ranging from 91 m.m. to 160 m.m. are mentioned as within normal bounds. Thus the recognition of the normal arterial tension today is in the same state as was the recognition of the normal body temperature some eighty years ago, when any temperature between 94° and 104° Fahr. might have been considered normal body heat.

The great difference between the zero-values mentioned as normal arterial tension is caused by many factors, principally the different widths of the pneumatic cuffs used for the purpose of compressing the upper arm and obliterating the brachialis artery. If the cuff is broader a lower zero-value is obtained; if the cuff is narrower the zero-value is found to be higher, within certain limits. No zero-value has as yet been proven conclusively to be identical with the true expression of the normal arterial tension; but 110-120 m.m. Hg. appears to be the zero-value which has found most favor among writers.

My purpose is to prove that the maximum tension of the radialis artery at a level higher than 140 m.m. but not exceeding 150 m.m. Hg. is the normal arterial tension. The arterial tension is a very important object of observation at every medical examination, for it stands in

intimate relation to various grades of natural immunity. To justify these propositions, I desire to present for consideration a summarized account of results obtained by my analysis of measurements (measured with the radialis-arteriometer) of the maximum tension of the radialis artery in various diseases.

1. Analysis of 953 measurements in 28 cases of cyclothymia shows that at a spontaneously stable maximum tension of the radialis artery at a level of more than 140 m.m., not exceeding 150 m.m., there does not exist any cyclothymia, either in the manic or in the depressive state. The uniformity of the findings in several cases supports this deduction and adds increased strength to its validity.

2. Analysis of 5046 measurements of the maximum tension of the radialis artery in 130 cases of schizophrenia proves that at a spontaneously stable arterial tension of the radialis at a level higher than 140 m.m., not exceeding 150 m.m. Hg., there does not exist any schizophrenia in the acute or the subacute state.

3. Analysis of 1350 measurements of the maximum tension of the radialis artery in 85 cases of pulmonary tuberculosis shows that at a spontaneously stable tension of the radialis artery at a level higher than 140 m.m., not exceeding 150 m.m. Hg., there does not exist any pulmonary tuberculosis.

Here I must express my regret that circumstances have prevented me from carrying out my plan of extending my investigation of the maximum radialis tension to the field of leprosy; for a comparative study of the arterial tension in pulmonary tuberculosis and leprosy would undoubtedly have been instructive in many interesting theoretical questions\*

4. Analysis of less than 1000 measurements in each of the other larger groups of mental diseases supports the deduction that at a spontaneously stable maximum tension of the radialis artery at a level of more than 140 m.m., not exceeding 150 m.m. Hg., it is highly probable that there does not exist mental disease of any group in acute or subacute state.

5. Young men of psychopathic tendencies, as far as I have observed, have a labile arterial tension at changeable levels of 200-260 m.m. Hg. or more.

6. Feeble-minded persons have a spontaneous radialis tension at a continuous level of 150 m.m.

\* In the paper of which the present is an abstract, reference is made to the theoretical question, as far as the data on hand enable the author briefly to discuss it.



Hg., with a lower degree of stability; an exception with higher or lower level, indicates some complication, either psychic or somatic, or both.

7. In cases of cyclothymia, when the symptoms subside and remission begins, the maximum tension of the radial artery becomes spontaneously reduced to a level higher than 140, not exceeding 150 m.m. Hg., and during the remission gradually acquires a higher degree of stability. This spontaneous reduction of the maximum arterial tension of the radial artery to 150 m.m. Hg. takes place with the same regularity with which the body temperature is reduced to 98.6 degrees Fahr. when an infectious disease has run its course. An exception is a symptom of complication.

8. In cyclothymoid schizophrenia, when the symptoms subside and a period of remission begins, the arterial tension spontaneously becomes reduced to 150 m.m. Hg., but rarely attains a high grade of stability.

9. During the period of remission in cyclothymia, after the manic as well as after the depressive period, the maximum tension of the radial artery is found continuously at a level higher than 140 m.m., not exceeding 150 m.m. Hg., day after day for weeks and months, as long as the remission continues undisturbed. An exception is a sign of complication.

10. During periods of remission in cyclothymoid schizophrenia, the maximum tension of the radial artery is continuously at a level higher than 140 m.m., not exceeding 150 m.m. Hg., but more labile than in true cyclothymia.

11. In pulmonary tuberculosis, when improvement takes place, the frequency maximum of the radial arterial tension values gradually approaches the level of 150 m.m. Hg.; on the other hand, when aggravation takes place, the frequency maximum referred to recedes, either gradually or suddenly, to levels further from 150 m.m. Hg.

12. In schizophrenia and other mental diseases, (with few exceptional cases) the maximum tension of the radial artery is promptly reducible to a level higher than 140 m.m., not exceeding 150 m.m. Hg., by the action of iodine used according to a chemotherapeutic technique, which I have already described\* and will discuss with more detail in a separate article.

13. In pulmonary tuberculosis the maximum arterial tension is promptly reducible to 150

m.m. Hg. by the action of iodine according to the technique\* applied to mental diseases.

14. If the distribution of the several radial arterial tension values is computed, with the exclusion of values observed on days of remission, it will be found that the frequency minimum is at the level of 140-160 m.m. in cyclothymia schizophrenia and other mental diseases in the acute and subacute state.

15. In pulmonary tuberculosis the frequency minimum of all maximum arterial tension values observed is at the level of 140-160 m.m. Hg. The frequency maximum is lower than 140 m.m., and in certain cases there is a frequency maximum higher than 160 m.m. Hg.

16. In healthy young adults of sound habits (including outdoor exercise) the frequency maximum of the radial arterial tension values observed is at the level of 150 m.m. Hg.

From these facts, the following deductions may be drawn:

Inasmuch as the diseases mentioned above (mental diseases in acute or subacute state, psychopathy, and pulmonary tuberculosis) do not exist in persons who have stable arterial tension at a level higher than 140 m.m., not exceeding 150 m.m. Hg.;

Inasmuch as in cyclothymia of manic as well as depressive state and in cyclothymoid schizophrenia the arterial tension during periods of remission becomes spontaneously reduced to a level higher than 140 m.m., not exceeding 150 m.m. Hg.;

Inasmuch as in pulmonary tuberculosis improvement is associated with a slow and gradual approach of the frequency maximum of all radial arterial tension values observed to a level ever nearer the value of 150 m.m. Hg.;

Inasmuch as in schizophrenia, other mental diseases, psychopathy, and also in pulmonary tuberculosis, the arterial tension is promptly reducible, by chemotherapy, to a level higher than 140 m.m., not exceeding 150 m.m. Hg.;

Inasmuch as, during periods of remission in cyclothymia, and also in remissions of cyclothymoid schizophrenia, the maximum tension of the radial artery is found continuously at a level higher than 140 m.m., not exceeding 150 m.m. Hg.;

Inasmuch as in cyclothymia, in schizophrenia, and other mental diseases in acute or subacute state, as well as in pulmonary tuberculosis, the

\* Compare Eneuba, *Orthoarthology*, BOSTON MEDICAL AND SURGICAL JOURNAL, cxcvii, 22, 1917.

frequency minimum of all radialis tension values found is between 140 and 160 m.m. Hg.;

And, finally, inasmuch as in healthy young adults of sound habits the frequency maximum of all radialis arterial tension values found is at a level higher than 140 m.m., not exceeding 150 m.m. Hg.;

It stands proven that a maximum tension of the radialis artery at a level higher than 140 m.m., not exceeding 150 m.m. Hg., is the normal arterial tension.

17. Normal arterial tension may possess various degrees of stability.\* A spontaneously stable normal arterial tension coincides with a high grade of natural immunity.

18. Any alteration of the arterial tension to values higher than 160 m.m. or lower than 140 m.m. Hg., if it tends to become continuous, is abnormal, at least in the first half of life.

19. Labile arterial tension, higher than 160 m.m. or lower than 140 m.m. Hg., or changeable between higher or lower values, coincides with lower grades of natural immunity, at least in certain types of abnormal arterial tension.

20. Healthy boys 12 to 20 years of age have a maximum tension of the radialis artery at a level higher than 140 m.m., not exceeding 150 m.m. Hg.

21. Boys, 12 to 20 years old, who have abnormal arterial tension of certain types, have lower grades of natural immunity. It is more than probable that among such boys may be found a large proportion of the future cases of schizophrenia and pulmonary tuberculosis. By the aid of measurements of the maximum tension of the radialis artery these classes of boys can be recognized with decidedly increased facility.

22. Only exceptional cases of schizophrenia recover spontaneously normal arterial tension, and a large proportion of the boys with abnormal arterial tension do not recover normal arterial tension under the customary provisions of social hygiene and sanitation.

23. Only exceptionally do psychopathic persons recover normal arterial tension spontaneously. I have seen two cases of psychopathic young men recover normal arterial tension by chemotherapeutic technique, and a few weeks later begin to show a marked improvement in personality. The majority of the class are lodged in the department for dangerous insane, and live year after year with continuous vasomotor unrest at a level of 200 to 260 m.m. or

more, and with unabated intrapsychic and psychomotor unrest. It is more than probable that all prisons of the world are full of these types of arterial tension.

In conclusion, it is safe to say that a general adoption of the practice of measuring the maximum tension of the radialis artery should soon give beneficial results, particularly in the fields of mental diseases, psychopathy, pulmonary tuberculosis, dysarteriotony of youth, and another disease which I am not at liberty to mention because of the limits of my investigation.

Experience gained through my analysis of measurements of the maximum tension of the radialis artery confirms the belief which I have entertained for some years, that sooner or later the time must come when the maximum radialis arterial tension chart in chronic diseases will prove as useful in clinical work as the temperature chart and the pulse frequency charts have proved themselves to be in acute diseases.

### Selected Papers.

#### ON CANCER OF THE TONGUE.\*

By D'ARCY POWER, M.B., OXON., F.R.C.S., ENGLAND.

Surgeon to the Lecturer on Surgery at St. Bartholomew's Hospital.

CANCER of the tongue is remarkable in the fact that it is almost entirely a human disease: it is always of one type; it is unknown in children; it is common in men, rare in women; it is not associated with any inherited predisposition to carcinoma. Historically, cancer of the tongue does not become important as a surgical disease until the seventeenth century. The Greek, Latin, and Arabian writers on surgery hardly mention it and so far as can be ascertained at present it was unknown to the Anglo-Saxons.

The first definite notice of cancer of the tongue is the case of Ralph Freeman, who died on March 16, 1634, whilst serving the office of Lord Mayor of London. He suffered from secondary hemorrhage, and it was the opinion of the surgeons and physicians in attendance upon him that a mercurial course might have been advantageous. The second recorded case oc-

\* Abstract of The Bradshaw Lecture delivered at the Royal College of Surgeons of England, on Thursday, Nov. 14, 1918, and reprinted from *The Medical Press*.

\* Degree of stability ascertained by special tests.

curred in Germany, and was considered a miraculous punishment for cursing the clergy. The story runs that "lately a certain Baron directed his jibes against all and sundry, but kept his most poisonous shafts for the clergy and for those who devoted themselves to God's service. One day a holy brother of good repute, who had been lashed by him, said, 'Your foul tongue has overlong deserved that punishment from an offended God which it will shortly receive.' The Baron rode off undismayed, but a few days afterwards a small swelling began to grow on the side of his tongue. Little by little it increased in size, until it became inoperable, and the Baron confessed and penitent died miserably afflicted." From the middle of the seventeenth century onwards cancer of the tongue became frequent, and English surgeons were busy in devising operations for its cure.

The zoological distribution of lingual carcinoma was next considered in the light of the experience of Sir John McFadyean, Principal of the Royal Veterinary College, of Dr. J. A. Murray, Director of the Imperial Cancer Research Fund, and Dr. Anton Sticker. At the present time cancer of the tongue is known to have occurred in one horse, three aged cats, and one old dog; in each case it was of the squamous-celled variety.

It appears fair to assume, therefore, that lingual carcinoma has always occurred in men and domesticated animals: that originally in man it was no more common than it is now in animals, but that from the seventeenth century onwards it has increased out of all proportion in man, while in animals the incidence has remained stationary.

The rate at which cancer of the tongue has increased in man is well shown by the returns of the Registrar-General. Dr. Stevenson, Superintendent of Statistics at Somerset House, wrote, in 1909: "The increase of deaths among males from cancer of the jaw, and especially of the tongue, is remarkable, and can scarcely be explained by improved diagnosis. Although cancer of the tongue presents little difficulty of diagnosis in its later stages, the recorded mortality has increased among males by no less than 228% in 41 years. The increase, moreover is entirely confined to the male sex."

The possible factors causing this increase in cancer of the tongue were then considered. Irritation has long been looked upon as an im-

portant factor in causing cancer, and the state of the teeth was passed under review to determine whether pyorrhea (peridontitis) and caries had become more common recently. The virulence, but not the amount of pyorrhea, seemed to have increased, while caries does not appear to be more frequent now than it was in some parts of England during prehistoric times. It was noted that the Roman skulls in England had nearly as many carious teeth as Londoners have at the present day, so that if cancer of the tongue was a direct result of carious teeth the disease should have been as well known to the surgeons of Rome as it now is to us.

An examination of the records of St. Bartholomew's Hospital showed that 169 persons were admitted with cancer of the tongue during the years 1909-1916. Nine of the patients were women and 160 men. The proportion of men to women being eighteen to one—the true proportion as shown by the Registrar-General's returns being one woman to eight men. Seven of the women were married, one was unmarried, and the social state of the other is not mentioned. Of the seven married women one gave a history of syphilis, two showed evidence of syphilis, and one was a widow, who had only one child alive out of five, the note adding, "She looked as if she drank." One woman had leukoplakia of the tongue at the age of seventeen, and stated that her father had suffered from "abscess of the brain," which was cured by medicine, and was probably a gummatous meningitis. There was no history of syphilis, either acquired or inherited, in the other two married women. The unmarried woman—a nurse—stated that her father died of aneurysm, and she herself had suffered from adolescent paralysis, which came on suddenly, and was cured by medicine. None of the women smoked, and all had bad teeth.

In the case of the men, ninety-three of the patients out of 160 were syphilitic: 62 gave a history of syphilis, and of these 31 showed signs of the disease. The syphilis was invariably of long standing, and taking a few cases in the series without selection, the primary infection was said to have been 26 years, 30 years, 29 years, 40 years, 28 years, 23 years, and 43 years previously. Twenty-six of the patients stated definitely that they had never contracted syphilis, but one of them had suffered from gonorrhea and two had a positive Wassermann re-

action. Many of the patients had drunk beer to excess, but did not, as a rule, acknowledge that they had taken spirits freely.

A Wassermann test had only been performed 26 times, with the result that it was negative in twelve and positive in six cases; in five it was doubtful negative, and in three doubtful positive. These results were compared with those kindly furnished by Captain Arnold Renshaw, R.A.M.C., of the Manchester University Medical School, and Captain Archibald Leitch, R.A.M.C. (T), of the Cancer Hospital, Brompton. The evidence brought forward points to a close association between syphilis and cancer of the tongue. The syphilis may be active; it is more often quiescent, or even extinct, and the conclusion arrived at is that as in the case of some cases of tuberculosis, "syphilis is the bed upon which cancer of the tongue is often born." It further appeared that an increase in the number of deaths from lingual carcinoma has occurred after periods when mercury has temporarily fallen into disuse in the treatment of syphilis. Such insufficient treatment was the rule in the later years of Queen Elizabeth's reign when guaiac, sarsaparilla and the "vegetable" cures displaced original mercurial methods: during the Regency period, when some of the army medical officers nearly succeeded in abolishing the use of mercury, and again in the earlier Victorian era, when the value of potassium iodide was unduly exploited. It is interesting to notice that many of the patients whose cases are recorded at St. Bartholomew's Hospital stated voluntarily that they had been treated with mercury for a fortnight, and three weeks for syphilis, and had then considered themselves cured.

As cancer occurs sometimes in the domesticated animals, syphilis cannot be considered as more than a disposing cause, and some exciting cause must therefore be looked for which has become prevalent recently. The increased consumption of tobacco seems to be such a cause. Before 1868, cigars could be smoked openly by the upper and middle classes of society: pipes were taboo in public, and cigarettes were unknown. Snuff taking was falling into disuse. Smoking in public has increased steadily from 1877, until it is now well-nigh universal among men, women and boys. It is possible, therefore, that smoking is as important in the increasing mortality from cancer of the tongue.

The irritant acts locally in two ways, for it is partly due to the nicotine and partly to the heat, and it is well known from kangri cancer that thermal irritation is a factor in the production of epithelioma. The actual cause of cancer is still undiscovered, but if the main factors are known it should not be impossible to determine its nature.

In conclusion the lecturer thought that it should be possible to reduce cancer of the tongue to the subordinate position it occupied before the seventeenth century in many, and which it still holds in the diseases of animals. This could be effected by a thorough treatment of syphilis in its initial stages. Persons who are treated for syphilis should be told never to smoke, not to drink to excess, and to pay regular visits to the dentist. Such advice should be given when the patient is still under treatment, and should not be deferred until the tongue has become sore. Failure to follow this advice, or a continuance of treatment upon the old lines, will probably be followed by a very large increase in the number of patients suffering from lingual carcinoma. The increase should begin about 1950, and should affect women as well as men, for syphilis is rife at the present time among the younger generation, and both sexes smoke much larger quantities of tobacco than ever before.

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### American Medical Biographies.

#### BURNSIDE FOSTER (1861-1917).\*

The editor of the *St. Paul Medical Journal*, professor of dermatology, University of Minnesota, and lecturer on the history of medicine, and consultant in dermatology and genito-urinary diseases, Burnside Foster died in his fifty-seventh year, at his home in St. Paul, on the thirteenth day of June, 1917.

He was the son of Dwight Foster and Henriette Perkins Baldwin and was born on the seventh day of May, 1861, in Worcester, Mass. His ancestors on both sides were distinguished people. His father was judge of the Supreme Court of Massachusetts, and his maternal grandfather, Sherman Baldwin of New Haven, was a Governor of Connecticut and a United

\* From the forthcoming "American Medical Biography," by Dr. Howard A. Kelly and Dr. Walter L. Burrage. Any important additions or corrections will be welcomed by the authors.

States Senator. The first Fosters came to Ipswich, Mass., in 1638.

Burnside Foster graduated in arts with the class of 1882 of Yale. He took his medical course at Harvard, graduating in 1885, and spent eighteen months as an interne in the Massachusetts General Hospital, after which he went to Europe, where he studied in Dublin and Vienna. He began active practice in 1888 in Minneapolis, at which time he was assistant to the professor of anatomy in the University of Minnesota. He remained a member of the medical faculty of that institution until his death. In 1891 he established himself in St. Paul and from that time limited his practice to his specialty.

On New Year's Day, 1894, he married Sophia Vernon Hammond, daughter of General John H. Hammond, who served his country during the Civil War. Their three children and his widow survived him.

When the Ramsey County Medical Society established the *St. Paul Medical Journal* in 1898 Foster was appointed editor, a position he held until January 1, 1916. At that time the editing and publishing committee made a statement from which the following is an abstract:

"Dr. Burnside Foster has laid down the editorial burden he has carried for seventeen years with such distinguished success. His scholarly editorials, written in his finished style and faultless English will undoubtedly be missed. The editorial pages of the *Journal* have repeatedly exerted the most widespread influence.

"Dr. Foster was the first to urge the frequent examination of people in apparently good health that they might thus be guided by their physicians in the preservation of their most valuable asset. In recognition of his services in this work he was made a member of the board of trustees of the Life Extension Institute, New York.

"As the result of an attack made by him in the editorial columns of the *Journal*, upon immoral medical advertisements in the daily papers, the postmaster general of the United States, issued an order excluding papers carrying these advertisements from the United States mails. This has purged the announcements of abortionists *et id omne genus*, from the reading matter daily offered to the families of the entire country.

"At a very early date he waged war on the practice of splitting fees. On the question of euthanasia he always upheld the right of the

individual to live his life. The *St. Paul Medical Journal*, under his leadership, has the unique distinction of being the only organ of a county medical society that has survived the diseases of infancy."

In 1909 Dr. Foster was invited to address the Association of Life Insurance Presidents, New York City, on methods of increasing the longevity of their policy holders.

Burnside Foster excelled in all the social virtues. His home and family were his most highly prized possessions and there it was that he was seen at his best. As a host he was perfect, and no one privileged to enjoy the hospitality of the home presided over by the genial physician and his charming wife could ever forget such a rare experience.

In the midst of his numerous activities at the early age of fifty-six, after a short illness, he breathed his last at his home in the early summer of 1917.

H. LONGSTREET TAYLOR, M.D.

### Book Reviews.

*Military Hygiene and Sanitation.* By FRANK R. KEEFER, A.M., M.D. (Second Edition.) Philadelphia and London: W. B. Saunders Company. 1918.

The scope of military hygiene and sanitation includes all the problems encountered in maintaining the health of a civil community with the additional difficulties arising from conditions caused by the work and environment of the soldier. The second edition of *Military Hygiene and Sanitation* presents clearly every phase of the subject. The care of troops, the essentials of personal hygiene, the necessity of physical training, and suitable food, clothing, and equipment are discussed. Of great value are the chapters dealing with preventable diseases—their classification, causes, and means of prevention. The difficulties of securing a pure water supply, and methods of providing for sanitation of posts, barracks, and camps are considered. Perhaps the most valuable and timely addition to this edition is the information relative to the evolution of trench warfare. The soldiers are exposed to special diseases because of their environment; personal hygiene and general sanitation are particularly difficult to maintain; and the type of wound resulting from the projectiles used in modern warfare is peculiarly susceptible to infection. Many of these problems are presented in this book. Special chapters deal with tropic and arctic service.



**Surgical Treatment.** A Practical Treatise on the Therapy of Surgical Diseases for the Use of Practitioners and Students of Surgery. By JAMES PETER WARBASSE, M.D., Fellow of the American College of Surgeons, American Medical Association, American Academy of Medicine, New York Academy of Medicine; Formerly Attending Surgeon to the Methodist Episcopal Hospital, Brooklyn, New York. In Three Volumes, with 2,400 Illustrations. Volume I. Philadelphia and London: W. B. Saunders Company. 1918.

This volume, the first of three, contains 900 pages of text, and a 50-page index; it treats of those subjects usually grouped under the head of surgical principles (wounds, inflammation, infections, anesthesia, tumors, etc.), and also surgical conditions of the blood vessels, lymphatics, bones, muscle, skin, and nerves.

We quote from the preface which, in common with most prefaces, should be carefully read by everyone who opens the book. Unfortunately, most readers begin beyond the preface and never return to it.

"This work has been written in the interest of the surgical patient. The object has been to place in the hands of the surgeon the means for rendering help in every surgical condition under all circumstances. The aim has been to make this information easily accessible, and its application practical.

"In most surgical diseases there is an ideal course of treatment which may be pursued and which represents the highest possibility of surgery. The author has endeavored to present this maximum of treatment. The author is aware that circumstances may surround both the patient and the surgeon which make impossible the applying of the ideal measures, or rendering such attempts inexpedient.

"Surgery is an art based upon a complex of sciences. It is always in a developmental stage. Accordingly the author has endeavored to inspire the reader with the spirit of originality. To teach him not only how to do, but to suggest to him new lines of action, to set him thinking on the problem of treatment from his own standpoint.

"It is assumed that the surgeon who turns to these pages for help is familiar with the fundamentals of surgical pathology and diagnosis.

"Prophylaxis is regarded as a part of pre-treatment, and prognosis is so intimately associated with the results of treatment, that each is accorded as much attention as possible.

"While large consideration has been given to new methods, nothing has been introduced for the sake of novelty. In the presence of the newer modes of treatment, the fact has not been lost sight of, that there are old methods and old agents of surgical therapy which have sur-

vived the trials of time and which are destined to outlive the newer things which are now vaunted in their places.

"That this work may prove a practical source of strength to the surgeon in his encounters with disease, and that it may contribute to the promotion of the highest ideals of surgery, is the purpose which has prompted its creation."

The book creates a distinctly favorable impression. The author, who has retired from active hospital practice, has evidently taken his own time to collect his material, and to clarify and systematize his surgical judgment and conclusions. He writes after he has acquired his own surgical experience, not before he developed it. He maintains, nevertheless, an open mind.

The volume is characterized by an evident desire to mention every surgical condition of any importance, and every method of treatment which is worthy of trial. Here and there are omissions, or rather references, which seem too brief, as, for instance, the abduction treatment of fracture of surgical neck of femur, as described by Whitman, and certain fractures of the lower end of the femur, emphasized by Cotton.

The chapter (75 pages) on anesthesia is altogether admirable.

Illustrations are numerous, accurate, and sharp: those which are borrowed seem as if reproduced from entirely new plates. The paper, though glazed, is of excellent quality.

The book is strongly recommended to the surgical practitioner.

**Diseases of the Male Urethra, Including Impotence and Sterility.** IRVIN S. KNOLL, B.S., M.D., F.A.C.S., Professor of Genito-Urinary Diseases, Post-Graduate Medical School and Hospital; Associate Genito-Urinary Surgeon, Michael Reese Hospital, Chicago. Illustrated. Philadelphia and London: W. B. Saunders Company. 1918.

This book takes up in simple, direct fashion the consideration of the diseases of the male urethra, and the work is done in a most satisfactory way. The book itself, with its many admirable plates, some of which are colored, is unusually well made. The subjects included in its contents are presented with a practical brevity which is at once adequate and pleasing.

Especially to be commended are the parts of the book devoted to treatment. The descriptions of various operations with their admirable illustrations, such as Belfield's vasotomy, Hagner's epididymotomy, and the operation for prostatic abscess, deserve the greatest credit. There is an adequate index, and both the type and paper are of the best. The author has put forth a book which is really worth while.

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### THE DEATH OF DR. SPURZHEIM.

IN the issue of the JOURNAL for February 6, we commented editorially on the life and work of Dr. Spurzheim and the prevalence which his cult of phrenology attained in this community some 90 years ago. It is remarkable to what an extent the teaching of this man imposed upon the credulity not merely of the gullible public but of the regular profession at the time. The extent to which Dr. Spurzheim's apparently blameless and charming personal character impressed his Boston contemporaries is evidenced in the following account of his death, which appeared as the leading editorial in the issue of the JOURNAL for November 14, 1832:

It is our melancholy duty to record the death of a great and good man. Dr. Spurzheim, so well known in Europe and America as the companion of Dr. Gall—as a deep thinker and close observer of human nature—as an interesting teacher of moral and intellectual philosophy, the author of several works on the anatomy and physiology of the brain and nervous system—

so highly esteemed for his eminent social virtues and moral worth, and so much beloved by all who shared his friendship, has been prematurely removed from this new scene of his contemplated labors. He died on Saturday evening, at his residence in Pearl street, after an illness of about four weeks, deeply lamented by the friends he had made during his short residence in this city; his decease will also be a source of sorrow and disappointment to the inhabitants generally, not only of Boston, but also of other cities in other states, where his visits have been solicited, and anticipated with unusual interest.

Dr. Spurzheim was born near Treves, in Germany, in 1776. He arrived in this country in August last. Just three weeks ago this day he delivered his last lecture. He was then evidently laboring under serious indisposition, contracted by occasional exposure to the cold night air after being much heated at his lectures. The greater part of Wednesday night he was disturbed by rigors and restlessness; and although too ill to leave his apartments the next day, he was unwilling to submit himself to active medical treatment. This unwillingness was not removed until his disease, which was a typhus fever, had so far advanced that his medical attendants deemed it too late to expect benefit from medication. His brain was chiefly implicated, his reason departed, and he died without apparent suffering. He was anxious to live to accomplish the great moral purposes he had in view, but looked upon death without dread, and with that composure and serenity which might be expected from a Christian philosopher.

On the morning after his decease, his friends assembled at his apartments to consider what proceedings were rendered necessary and proper by this melancholy event; and it was decided that the body should be examined and embalmed, and a bust taken, under the direction of Drs. J. C. Warren, J. Jackson, G. C. Shattuck, W. Channing, G. Parkman, J. Ware, E. Reynolds, C. Robbins, W. Lewis, J. G. Stevenson, J. Fisher, W. Grigg, and S. G. Howe.

The care and conduct of the funeral obsequies were committed to Hon. J. Quincy, President of Harvard University; Hon. H. G. Otis, N. Bowditch, LL.D.; Joseph Story, LL.D.; J. Tuckerman, S.T.D.; Charles Follen, J.U.D.; J. Barber, M.D.; Charles Beck, J.U.D.; and W. Grigg, M.D.

It was further provided, that the papers, casts, and other property of the deceased, should be committed to John Pickering, LL.D.; N. Bowditch, LL.D.; T. W. Ward, Esq., and Nahum Capen, Esq., to make such disposition of the same as the law provides in such cases.

It is understood that the remains of the deceased will be interred at Mount Auburn, and an address made on the occasion by a gentleman who enjoyed a large share of his friendship,

and was particularly acquainted with his great and important purposes, as well as his private feelings and character.

The medical gentlemen above named proceeded without delay, to execute the trust committed to them. A good cast has been taken, as well as several portraits. The appearances on examining the brain were such as are usually attributed to congestion; the minute vessels of the membranes being strongly injected, and presenting an appearance of unusual redness. The edges of the valves of the aorta were slightly indurated, and extensive adhesions of the omentum to the parietal peritoneum about the right iliac region indicated some recent or remote morbid action in that part. Further than this we could discern no mark of disease in any organ that was examined, although three peculiarities of structure were remarked:—one, the unusual size of the aorta, and the natural and proportional, not morbid thickness of its coats; the second, the smallness of the arteria innominata, which was no larger than the left carotid or left subclavian; and the third, a bilobate spleen. It should be remembered that the destination\* of the body precluded the possibility of a very minute examination of the two most important organs.

Without traducing the personal character of "a great and good man," it is obvious in the light of subsequent history that Dr. Spurzheim's pseudo-medical propaganda was an early example of German scientific fake. The spurious character of phrenology soon became patent to a later generation. So wise a man as Dr. Oliver Wendell Holmes was one of the earliest to expose its true nature in his delightful essay on phrenology as a pseudo-science in "The Professor at the Breakfast Table."

Having been photographed, and stereographed, and chromatographed, or done in colors, it only remained to be phrenologized. A polite note from Messrs. Bumpus and Crane, requesting our attendance at the Physiological Emporium, was too tempting to be resisted. We repaired to that scientific Golgotha.

Messrs. Bumpus and Crane are arranged on the plan of the man and the woman in the toy called a "weather-house," both on the same wooden arm suspended on a pivot,—so that when one come to the door, the other retires backwards, and *vice versa*. The more particular specialty of one is to lubricate your entrance and exit,—that of the other to polish you off phrenologically in the recesses of the establishment. Suppose yourself in a room full of casts and pictures, before a counterful of books with taking titles. I wonder if the picture of the brain is there, "approved by a noted phrenol-

ogist, which was copied from my, the Professor's, folio plate in the work of Gall and Spurzheim. An extra convolution, No. 9, *Destructiveness*, according to the list beneath, which was not to be seen in the plate, itself a copy of Nature, was very liberally supplied by the artist, to meet the wants of the catalogue of "organs." Professor Bumpus is seated in front of a row of women,—horn-combers and gold-beaders, or somewhere about that range of life,—looking so credulous, that, if any Second-Advent Miller or Joe Smith should come along, he could string the whole lot of them on his cheapest lie, as a boy strings a dozen "shiners" on a stripped twig of willow.

The Professor (meaning ourselves) is in a hurry, as usual; let the horn-combers wait,—he shall be bumped without inspecting the ante-chamber.

Tape round the head,—22 inches. (Come on, old 23 inches, if you think you are the better man!)

Feels thorax and arm, and muzzles round among muscles as those horrid old women poke their fingers into the salt-meat on the provision-stall at the Quincy Market. Vitality, No. 5 or 6, or something or other. *Victuality* (organ at epigastrium), some other number equally significant.

Mild shampooing of the head now commences. Extraordinary revelations! Cupidiphilous, 6! Hymeniphilous, 6+! Paediphilous, 5! Deipniphilous, 8!! and so on. Meant for a linguist.—Invaluable information. Will invest in grammars and dictionaries immediately.—I have nothing against the grand total of my phrenological endowments.

I never set great store on my head, and did not think Messrs. Bumpus and Crane would give me so good a lot of organs as they did, especially considering that I was a *dead-head* on that occasion. Much obliged to them for their politeness. They have been useful in their way by calling attention to important physiological facts. (This concession is due to our immense bump of Candor.)

#### A SHORT LECTURE ON PHRENOLOGY, READ TO THE BOARDERS AT OUR BREAKFAST TABLE.

I shall begin, my friends, with the definition of a *Pseudo-science*. A Pseudo-science consists of a *nomenclature*, with self-adjusting arrangement, by which all positive evidence, or such as favors its doctrines, is admitted, and all negative evidence, or such as tells against it, is excluded. It is invariably connected with some lucrative practical application. Its professors and practitioners are usually shrewd people; they are very serious with the public, but wink and laugh a good deal among themselves. The believing multitude consists of women of both sexes, feeble-minded inquirers, practical optimists, people who always get cheated in buying horses, philanthropists who insist on hurrying

\* Spurzheim's skull is still preserved in the Warren Museum of the Harvard Medical School.

up the millennium, and others of this class, with here and there a clergyman, less frequently a lawyer, very rarely a physician, and almost never a horse-jockey or a member of the detective police.—I do not say that Phrenology was one of the Pseudo-sciences.

Pseudo-science does not necessarily consist wholly of lies. It does contain many truths, and even valuable ones. The rottenest bank starts with a little specie. It puts out a thousand promises to pay on the strength of a single dollar, but the dollar is very commonly a good one. The practitioners of the Pseudo-sciences know that common minds, after they have been baited with a real fact or two, will jump at the merest rag of a lie, or even at the bare hook. When we have one fact found, we are very apt to supply the next out of our own imagination. (How many persons can read Judges XV. 16 correctly the first time?) The Pseudo-sciences take advantage of this.—I did not say that it was so with Phrenology.

I have rarely met a sensible man who would not allow that there was *something* in Phrenology. A broad, high forehead, it is commonly agreed, promises intellect; one that is "villainous low" and has a huge hind-head back of it, is wont to mark an animal nature. I have as rarely met an unbiassed and sensible man who really believed in the bumps. It is observed, however, that persons with what the Phrenologists call "good heads" are more prone than others toward plenary belief in the doctrine.

It is so hard to prove a negative, that, if a man should assert that the moon was in truth a green cheese, formed by the coagulable substance of the Milky Way, and challenge me to prove the contrary, I might be puzzled. But if he offer to sell me a ton of this lunar cheese, I call on him to prove the truth of the caseous nature of our satellite, before I purchase.

It is not necessary to prove the falsity of the phrenological statement. It is only necessary to show that its truth is not proved, and cannot be, by the common course of argument. The walls of the head are double, with a great air-chamber between them, over the smallest and most closely crowded "organs." Can you tell how much money there is in a safe, which also has thick double walls, by kneading its knobs with your fingers? So when a man fumbles about my forehead, and talks about the organs of *Individuality*, *Size*, etc., I trust him as much as I should if he felt of the outside of my strong-box and told me that there was a five-dollar or a ten-dollar-bill under this or that particular rivet. Perhaps there is; *only he doesn't know anything about it*. But this is a point that I, the Professor, understand, my friends, or ought to, certainly, better than you do. The next argument you will all appreciate.

I proceed, therefore, to explain the self-adjusting mechanism of Phrenology, which is

very similar to that of the Pseudo-sciences. An example will show itself most conveniently.

A. is a notorious thief. Messrs. Bumpus and Crane examine him and find a good-sized organ of Acquisitiveness. Positive fact for Phrenology. Casts and drawings of A. are multiplied, and the bump *does not lose* in the act of copying.—I did not say it gained.—What do you look so for! (to the boarders.)

Presently B. turns up, a bigger thief than A. But B. has no bump at all over Acquisitiveness. Negative fact; goes against Phrenology.—Not a bit of it. Don't you see how small Conscientiousness is! *That's* the reason B. stole.

And then comes C., ten times as much a thief as either A. or B.,—used to steal before he was weaned, and would pick one of his own pockets and put its contents in another, if he could find no other way of committing petty larceny. Unfortunately, C. has a *hollow*, instead of a bump, over Acquisitiveness. Ah, but just look and see what a bump of Alimentiveness! Did not C. buy nuts and gingerbread, when a boy, with the money he stole? Of course you see why he is a thief, and how his example confirms our noble science.

At last comes along a case which is apparently a *settler*, for there is a little brain with vast and varied powers,—a case like that of Byron, for instance. Then comes out the grand reserve-reason which covers everything and renders it simply impossible ever to corner a Phrenologist. "It is not the size alone, but the *quality* of an organ, which determines its degree of power."

Oh! oh! I see.—The argument may be briefly stated thus by the Phrenologist: "Heads I win, tails you lose." Well, that's convenient.

It must be confessed that Phrenology has a certain resemblance to the Pseudo-sciences. I did not say it was a Pseudo-science.

I have often met persons who have been altogether struck up and amazed at the accuracy with which some wandering Professor of Phrenology had read their characters written upon their skull. Of course the Professor acquires his information solely through his cranial inspections and manipulations.—What are you laughing at! (to the boarders.)—But let us just *suppose*, for a moment, that a tolerably cunning fellow, who did not know or care anything about Phrenology, should open a shop and undertake to read off people's characters at fifty cents or a dollar apiece. Let us see how well he could get along without the "organs."

I will suppose myself to set up such a shop. I would invest one hundred dollars, more or less, in casts of brains, skulls, charts, and other matters that would make the most show for the money. That would do to begin with. I would then advertise myself as the celebrated Professor Brainey, or whatever name I might



choose, and wait for my first customer. My first customer is a middle-aged man. I look at him,—ask him a question or two, so as to hear him talk. When I have got the hang of him, I ask him to sit down, and proceed to fumble his skull, dictating as follows:

## SCALE FROM 1 TO 10.

LIST OF FACULTIES FOR CUSTOMER	PRIVATE NOTES FOR MY PUPIL Each to be accompanied with a wink.
Amativeness, 7	Most men love the conflicting sex, and all men like to be told they do.
Allmentiveness, 8	Don't you see that he has burst off his lowest waist-coat button with feeding, hey?
Acquisitiveness, 8	Of course—a middle-aged Yankee.
Approbateness, 7+	Hat well brushed. Hair ditto. mark the effect of that <i>plus</i> sign.
Self esteem, 6	His face shows that.
Benevolence, 9	That'll please him.
Conscientiousness, 8½	That fraction looks first-rate.
Mirthfulness, 7	Has laughed twice since he came in.
Ideality, 9	That sounds well.
Form, Size, Weight, Color, Locality, Eventuality, etc., etc.	Average everything that can't be guessed.

And so of the other faculties.

Of course, you know, that isn't the way the Phrenologists do. They go only by the bumps.—What do you keep laughing so for! (to the boarders.) I only said that is the way I should practise "Phrenology" for a living.

If no prophet is without honor in his own country, it is sometimes in his own country that the false prophet's fallacy is first perceived. An issue of the *London Medical Gazette* early in 1833 contains the following "very accurate and liberal notice of this distinguished philosopher," which was quoted with editorial comment in the *BOSTON MEDICAL AND SURGICAL JOURNAL* of March 27, 1833:

"This indefatigable follower of Gall died last month at Boston, United States, of 'brain fever,' in the fifty-eighth year of his age. We know not on whom, if on any, his mantle will descend; but we hope nobody will be foolish enough to bring it across the Atlantic." We can assure the Editor of the *Gazette* that a highly gifted individual has been found in this city foolish enough to assume the mantle of our departed friend, and that he has already crossed the Atlantic with the design of preparing himself the better to bear the responsibility and the honor of his assumption.

In the issue of the *JOURNAL* for April 10, 1833, appeared finally the following French comment on the life and labors of Dr. Spurzheim and on a portrait by his son-in-law. Even

in connection with a German pseudo-scientist, it is of pleasant interest to note the cordial and harmonious agreement between French and American opinion at that time.

Soon after the decease of Dr. Spurzheim, we forwarded to his relatives, through a mercantile friend in Paris, those numbers of this *JOURNAL* that contained an account of his death, and the consequent proceedings of his friends. The receipt of these communications has been acknowledged; and we present below an extract from our friend's letter, as it contains some information which it may be useful for those to have, who possess anything that can illustrate the character or objects of Dr. S., or that can throw any light on the history of his short but eminent career whilst in this country.

Paris, February 6th, 1833.

My dear Sir:

I received your interesting letter of the 17th of November in due course; and as soon as I could ascertain the address of one of Dr. Spurzheim's connections in Paris, lost no time in transmitting the papers you sent together with the intelligence conveyed in your letter relating to the same subject. This intelligence has proved extremely acceptable to the friends of the late Dr. S., as appears by the enclosed note from Mr. Richard, which I send, that you may notice his intention to publish an account of the life and scientific labors of the distinguished individual whose bereavement to society at large is so keenly felt.

Should it be in your power to contribute any further details respecting Dr. Spurzheim, from your own knowledge or gathered from his friends and admirers in Boston, I offer myself as the organ of communication with his relations, who are mostly in Switzerland. Men possessed of such moral worth and such examples of benevolence and charity united to extraordinary powers of mind are too rare in the world—and their removal is, indeed, a cause for general mourning. How poignant, then, must be the grief of those who, in addition to the common tie which links together society, are bound by the sacred one of kindred!

The respect shown to the memory of this great and good man reflects much honor upon the citizens of Boston, and affords an additional proof of the satisfactory state of morals and intellectual cultivation which as a Bostonian, I am proud to feel is diffused so widely among the inhabitants of my native place.

Belleve me, dear Sir,

Yours very faithfully

The name and address of the writer of the above are left at the office of this *JOURNAL*, at the disposal of any one who is desirous of availing of his polite offer. We here append the note of M. Richard, which is referred to above:

Monsieur:

J'ai reçu les journaux américains que vous avez bien m'adresser, et je m'empresse de les communiquer aux parents et amis du Dr. Spurzheim. Déjà plusieurs d'entre eux à qui j'en ai fait part en ont été fort touchés, et se joignent à moi pour vous remercier, vous et M. le Dr. Robbins, de votre attention délicate. Dans toute la vivacité de nos regrets et de notre douleur, il y a du moins pour nous une consolation à penser que l'homme excellent, le savant illustre, dont nous déplorons la perte, a été apprécié



aux Etats Unis selon son mérite—qu'il y a trouvé des sympathies et des amis, et que ses derniers moments ont été entourés des soins les plus tendres et les plus dévoués.

Ce que caractérisait éminemment Dr. Spurzheim c'était son côté moral, sa bienveillance, et son humanité. Il étudiait la science de l'homme avec amour, parce qu'il la croyait éminemment utile à notre amélioration et à notre bonheur. Il s'était promis bien des hautes jouissances en partant pour l'Amérique, et il se proposait pour l'avenir bien des travaux intéressants. Pourquoi la mort a-t-elle brisé les unes et les autres?

L'intérêt qu'il a inspiré, l'estime qu'on lui a portée et les honneurs qui ont été rendus à sa mémoire par les habitants de Boston, font à la fois l'éloge de vos concitoyens et celui du Dr. Spurzheim.

Agréez, Monsieur, l'assurance de ma considération distinguée.

J. DAVID RICHARD.

Paris, 24 Janvier, 1883, Rue du Regard, 6.

P. S.—Si quelques nouveaux détails, quelque publication nouvelle concernant Dr. Spurzheim, vous parvenaient d'Amérique, vous obligerez infiniment des parents et amis en les leur faisant connaître. Déjà M. — a eu la bonté de se charger de nous procurer quelques exemplaires d'un portrait lithographié du Docteur, annoncé par un des journaux que vous avez eu l'obligeance de m'envoyer. Je me propose d'écrire sur la vie et les travaux de Dr. Spurzheim, une notice aussi complète qu'il me sera possible; et M. St. Bruyères, son beau-fils, a l'intention de peindre un grand portrait du Docteur. L'un et l'autre avons besoin de rappeler tous nos souvenirs, et de nous entourer de tous les lumières.

### A CODE OF FACTORY LIGHTING.

A CODE of lighting for factories, mills, and other work places is the subject of an article which is contained in the weekly report of the U. S. Public Health Service for January 24, 1919. By permission of Mr. Samuel Gompers, chairman of the committee on labor, a set of rules which have been officially approved by the Illuminating Engineering Society and have been tried out for several years under working conditions, is reported.

Recommendation has been made by this committee that the code outlined below be put into practice in every state in the country. That this measure is a most desirable and important one is not to be questioned. Proper environment tends to higher standards of efficiency among workers. Under proper illuminating conditions there is an increased output because the effects of good light, both natural and artificial, include the following:

1. Reduction of accidents.
2. Greater accuracy in workmanship.
3. Decreased spoilage of product.
4. Increased production for the same labor cost.
5. Less eye strain.

6. Better working and living conditions.
7. Greater contentment of the workmen.
8. Better order, cleanliness, and neatness in the plant.
9. Easier supervision of the men.

Rules for artificial light which have been found most beneficial cover the intensity required, the shading of lamps, distribution of light on work, emergency lighting, and switching and controlling apparatus. Intensity required is explained in the following table:

Foot Candles <sup>1</sup> at the Work	Foot Candles <sup>1</sup> at the Work	
	Ordinary practice	Minimum
(a) Roadways and yard thoroughfares.....	0.02—0.25	0.02
(b) Storage spaces.....	.50—1.00	.25
(c) Stairways, passageways, aisles.....	.75—2.00	.25
(d) Rough manufacturing, such as rough machining, rough assembling, rough bench work.....	2.00—4.00	1.25
(e) Fine manufacturing, involving closer discrimination of detail.....	3.00—6.00	2.00
(f) Fine manufacturing, such as fine lathe work, pattern and tool making, light-colored textiles.....	4.00—8.00	3.00
(g) Special cases of fine work, such as watchmaking, engraving, drafting, dark-colored textiles.....	10.00—15.00	5.00
(h) Office work, such as accounting, typewriting, etc.....	4.00—8.00	2.00

<sup>1</sup> The foot-candle, the common unit of illumination, is the lighting effect produced upon an object by a standard candle at a distance of 1 foot. It is equal to the lighting effect of a 16 candle-power lamp at a distance of 1 foot, or of a 100-watt lamp at a distance of 1 foot. A lamp which would produce a uniform illumination of 1 foot-candle at a distance of 1 foot in any direction.

NOTE.—Measurements of illumination are to be made at the work with a properly standardized portable photometer.

Following is a brief summary of the code:  
Section 1—Daylight. In every work it is necessary that sufficient daylight be supplied through proper means. Each employee should have adequate natural light and many provisions for diffusion and adjustment of natural

light are suggested under this heading. If the sunshine is bright it must be diffused and if the days are dull, steps should be taken to aid in making up for the loss of full daylight.

Section II.—Value of Adequate Illumination. Accurate data reducing the increased output to a dollars and cents basis under specific improvement in lighting is now at hand and a poor lighting system has been proven to be a serious handicap to the factory owner who seeks money value. A good lighting system will easily pay for itself in the time saved for the workmen.

Section III.—Old and New Lamps. Consideration of the eye as a delicate organ has resulted in the remarkable lighting improvements now existing in factories, mills, offices, etc., which were heretofore scarcely thought of.

Section IV.—Effects on Factory and Mill Lighting Produced by Modern Lamps. A new era in industrial illumination has become possible with the introduction of scientific installation of lighting units, suiting each to the location and class of work for which it is best adapted.

Section V.—Overhead and Specific Methods of Artificial Lighting. Nowadays it is possible to eliminate to a great extent the individual lamps by providing overhead gas or electric lamps, thereby saving floor space, and is an effective means of lighting a large workroom.

Section VI.—Lighting Circuits for Electric Lamps and Supply Mains for Gas Lamps. It is important that the supply circuits for the lamps be kept strictly separate in order to avoid varying voltage, which is apt to result if the motors are connected to the same circuits with the lamps. It is also advisable to place gas lamps on supply lines separate from those delivering gas for power purposes.

Section VII.—Control of Lamps and Arrangement of Switches. Where a large number of lamps is used it is advisable that a large number of control circuits be maintained. Not all the lamps will be used at the same time, and additional switching is in reality a saver of energy when it permits half of a group of lamps to be turned off when the other half must necessarily be turned on.

Section VIII.—Systematic Procedure Should be Followed in Changing a Poor Lighting System over to an Improved Arrangement. Care and consideration should be used and time for study given to the locations to be lighted, since

a uniform and symmetrical installation is best prepared for in advance of its completion.

Section IX.—Reflectors and Their Effect on Efficiency. Better conditions which surround the eyes increase their function, and the type of reflector best suited to the employee's work should be carefully considered.

Section X.—Side Light Important in Some Factory and Mill Operations. Two methods are suggested for accomplishing this result,—one to lower the lamps and the other to use broader distributing reflectors than are called for by the rules which consider uniformity of the downward illumination only.

Section XI.—Maintenance. Provision Should be Made for Systematic Upkeep of Natural and Artificial Lighting. Regular window, lamp, and reflector cleaning should be a part of the routine of every factory, mill, or group of buildings. Dirty windows necessitate the increased use of artificial light, and darkness due to dirt enhances the danger of accident. Careful observation of this important measure should be observed.

Section XII.—Expert Assistance Suggested. The wide experience of experts in the lightning field is advantageous. Many points come up for solution which can only be solved by an expert.

Section XIII.—Other Features of Eye Protection. Care should be exercised by employers for those under their jurisdiction, against welding, etc., in which there is danger of direct eye injury.

## THE PROPAGANDA FOR ANARCHY IN THE UNITED STATES.

ALL good citizens, including us, the doctors, are deeply interested in the continued reign of Law and Order in the United States. That an attempt to undermine public security in this free country is in full swing is, however, a startling fact.

In Washington, in a building belonging to the Government itself (!), anarchistic sentiments were freely expressed a few days ago. Still more astonishing is the report that three members of the House of Representatives were present at this meeting.

In Philadelphia, in a schoolhouse, the property of the City Government (!), similar sentiments have been expressed. It is even said that

"there are 10,000 Reds" in that city and that they are soliciting and obtaining recruits, by means of public meetings, pamphlets, and personal solicitation.

In the *Public Ledger*, one Sklaroff, the executive secretary of the Socialists, is reported to have said, "We are preparing for the day of revolutionizing of this country's government." This same Russian intruder, and eminently undesirable citizen, boasts that he is not and means never to become naturalized. His first and only allegiance is to Russia.

This anarchist even charges the public school teachers and college professors with aiding in the dissemination of their unholy doctrines.

It is a genuine pleasure to be able to assert that we do not know a single member of our profession who has been misled into the ranks of the Bolsheviks or their congenial fellow-workers, the I. W. W.'s. We are all united in the support of Freedom and Orderly Government.

We hope the Government, while granting freedom of speech will not grant unbridled license. The Espionage Act is happily still in force. Let its safeguards and its penalties be enforced to the limit. We observe with pleasure that many of these anarchists are being deported. Surely it is most desirable that these Washington and Philadelphia agitators should follow. We gladly grant asylum to deserving foreigners who have come here, provided they will be industrious and law-abiding citizens, but we do not propose that our homes shall be burned down by our guests. We do not mean to allow them to reduce the United States to the terrible plight of Russia, with anarchy and assassination in the saddle.

Is the Department of Justice not going to do something about these Philadelphia anarchists?

ton office an accompanying questionnaire, so that there may be on file in Washington complete individual information covering the members of the profession. Simultaneously with the distribution of these questionnaires, state and county representatives of the Volunteer Medical Service Corps were instructed to urge all doctors in their communities to comply promptly with the request of the Council to fill out and forward promptly to Washington the blanks sent them; and to advise those who by any chance failed to receive blanks, to communicate with the Council of National Defense at once in order that application blanks might be furnished them.

The Volunteer Medical Service Corps was organized early in 1918 to serve the Government during the emergency of war. As this emergency has ceased to exist, active membership in the Corps is no longer solicited. However, the survey initiated by this organization last year has proved of such value as a source of information concerning the individual members of the medical profession that the Surgeons-General of the Army, Navy, and Public Health Service have requested the Council of National Defense to complete it so as to include every doctor in the country, in order that a permanent record of the profession may at all times be available for reference in future emergencies. Upon their completion, the records will be transferred to the Surgeon-General's library, where they will be kept up to date by a force assigned for the purpose, and be accessible to all government bureaus.

Every physician is requested to coöperate with the Council of National Defense, Washington, D. C., requesting that a blank be sent him if, through an oversight, he did not receive one.

#### COUNCIL OF NATIONAL DEFENSE.

THE Council of National Defense authorizes the following:

Early in February each physician in the United States, exclusive of those who served in the Medical Corps of the Army for the past two years and members of the Volunteer Medical Service Corps, received a communication from the Council of National Defense, requesting that he fill out and return promptly to the Washing-

#### INFLUENZA EPIDEMIC IN 1833.

In the *Doctor's Dilemma*, recently produced in Boston, Bernard Shaw has shown that in many instances discoveries which are considered new by members of the medical profession have received the attention of physicians in former years. In this connection, it has been of interest to notice in looking over an issue of the *JOURNAL*, for April 3, 1833, the following note on an epidemic of influenza in Russia in that year:

"This epidemic was, at our last accounts, extremely rife at St. Petersburg and Moscow. In St. Petersburg alone, it is said that 100,000 persons were suffering from it, and that the business and public amusements of both places are almost entirely arrested by its extreme prevalence."

#### MEDICAL NOTES.

**INFLUENZA, EPIDEMIC PREVALENCE IN THE UNITED STATES.**—For the week ended January, 1919, reports from State health officers indicate increases in the number of cases as compared with the preceding week in the following states: Alabama, Arkansas, Connecticut, Florida, Louisiana, North Carolina, Oregon, South Carolina, Vermont, Virginia, and Washington. Little change is thus evidenced in the general situation throughout the country. In the following states there is a decrease in the number of cases reported: California, Indiana, Iowa, Kansas, Maine, New Jersey, Ohio, and Oklahoma. There was an increase of about 25 per cent. of reported cases in zones surrounding Army camps as compared with the preceding week.

**AMERICAN JOURNAL OF CARE FOR CRIPPLES.**—The *American Journal of Care for Cripples*, which is the only special periodical in English on provision for the disabled, becomes a monthly with its January issue, according to announcement by its editor, Douglas C. McMurtrie. Although dealing extensively with the rehabilitation of the invalided soldier, the *Journal* is in no sense a war product, as it is now entering upon its eighth volume.

This periodical will contain in the future the studies, translations, and abstracts produced by the research department of the Red Cross Institute for Crippled and Disabled Men, which material has hitherto appeared in a special series of publications. The *Journal* also continues as the official organ of the Federation of Associations for Cripples.

**CRAIG COLONY FOR EPILEPTICS, NEW YORK.**—The Craig Colony for Epileptics, Sonyea, New York, was founded in 1894, for the reception of epileptics of all ages, excluding epileptics who are insane or who are markedly delinquent. The twenty-fifth annual report describes the work done by the colony during the year 1918. Two

one-story brick dormitories have been erected, which, when completed and equipped, can provide for 200 male patients of the more helpless class. The curriculum of the Colony school for younger patients has remained practically unchanged, with three scholastic teachers, a teacher of sloyd, a bandmaster, and an arts and crafts teacher giving courses of instruction. In the trade school, instruction in willow ware has resulted in efficient work.

There have been 170 new patients admitted during the year, and 188 persons have either been discharged or have died. There has been a daily average attendance during the year of 1,447.40 epileptics. This report contains pathological statistics and the case histories and autopsy reports of many patients.

**HEALTH OF AMERICAN TROOPS IN RUSSIA.**—A recent report of the conditions among the American troops in Russia states that the health of the men is good and less than four per cent. are in hospitals from all causes. There have been no infectious diseases. The winter has been mild, the food suitable and sufficient, and the sanitation has been improved as much as possible. There are hospital accommodations for 20 per cent. of the American and Allied troops, and they are being increased. An ambulance train is equipped for 100 cases, and there are one hundred ambulances and sleighs.

**WAR MORTALITY RATES.**—General March is reported to have announced that the number of deaths from disease has been less than the number due to death in battle. In past wars, the mortality from disease has usually exceeded the number of lives lost under fire. Statistics show that the battle death rate for the entire American Army in this war was 20 per 1,000 per year. In the Expeditionary Forces it was 57 per 1,000 per year. The disease death rate was 17 per 1,000 per year in the Expeditionary Forces and 16 in the Army at home. The battle death rate in the British Expeditionary Forces was 110 per 1,000 per year. It is the belief of General March that the lower death rate from disease has been due largely to the inoculation requirement of the Army and to the efficient work of the Medical Corps. If there had been no epidemic of influenza, the disease rate would probably have been diminished by one-half.

**DEATHS FROM INFLUENZA IN MEXICO.**—There have been approximately 432,000 deaths from influenza during the epidemic in Mexico.

**RESIGNATION OF DR. JULES DUESBERG.**—Dr. Jules Duesberg has resigned as a member of the faculty of the Johns Hopkins University and has sailed for Belgium to resume work at professor of anatomy at Liège University. Dr. Duesberg went to Baltimore in 1915.

**RETURN OF DR. ALEXIS CARREL.**—Dr. Alexis Carrel has returned from his service in a field hospital in the Montdidier section to resume his work at the Rockefeller Institute for Medical Research.

**RETURN OF BRIGADIER-GENERAL JOHN M. FINNEY.**—Brigadier-General John M. Finney of Baltimore has returned to the United States. He sailed for France 19 months ago as head of the Johns Hopkins Base Hospital Unit, and acted as chief consulting surgeon of the American Expeditionary Forces.

**WESTERN RESERVE UNIVERSITY SCHOOL OF MEDICINE.**—The School of Medicine of the Western Reserve University has voted to admit women next year.

**UNIVERSITY OF PENNSYLVANIA.**—The hospital of the University of Pennsylvania has decided to admit women physicians, who will act as interns. Two women students who will graduate from the medical department in June have been chosen by the managers of the hospital for hospital duty.

**PUBLICATION OF GERMAN WORK ON SHELL SHOCK.**—The Controller of Patents of Great Britain has received an application for a license to publish a book on the treatment of shell shock, written by Dr. Kraepelin. The request came from Edinburgh publishers, who wish to publish volume three of this author's work, "Psychiatry." The literature on the subject of mental diseases is not extensive; and as it is believed that this book, although written by an enemy, would be of value in British hospitals, the application has been favorably received by the Controller.

**DISTINCTION FOR DR. WILLIAM H. WELCH.**—Dr. William H. Welch, of the Johns Hopkins

Medical School, has been awarded the gold medal of the National Institute of Social Sciences.

**DISCOVERY OF A NEW ANESTHETIC.**—There have appeared recently in the daily press preliminary reports of the discovery of a new local anesthetic. Dr. David I. Macht, of the Pharmacological Department of the Johns Hopkins University, believes that he has discovered in benzyl alcohol or phenmethylol properties which can be used in the production of a local anesthesia forty times less toxic than cocaine. It is reported that while experimenting with benzyl benzoate, Dr. Macht happened to taste a minute particle of the benzyl alcohol and found his tongue completely anaesthetized. There was a slight irritability, followed by a sensation of numbness, coolness, and hardness, similar to the condition caused by cocaine solution. Experiments made with animals seem to have produced satisfactory results. Further information concerning this alleged discovery is awaited by medical journals with interest.

**GOLDENROD AND HAY-FEVER.**—In commenting upon the advisability of adopting goldenrod as a national flower, a writer in a recent issue of *Science* makes the following remarks:

Stories of the victims of this disease too often get into the funny papers in the same column with mother-in-law jokes—they both deserve to receive more consideration at the hands of the public at large.

Hollopeter\* states that hay-fever is largely due to the action of the pollen of the ragweed and of the goldenrod, the former being 85 per cent. guilty, while the latter is responsible for the remaining 15 per cent., not taking account of some few cases probably caused by the pollen of other plants. This seems to reduce the harm done by the goldenrod to a small amount, but it must be remembered that almost all cases are irritated by the pollen of this plant whether or not it is the specific cause of the attack.

Between one and two per cent. of our adult population probably either has hay-fever or is liable to contract it if the proper conditions arise. The efficiency of the victims is reduced during the attack a great deal, in some cases even causing them to be confined to their homes for a month or six weeks every fall. It is true that on this point there is a great variation, but all victims have a lowered vitality. Such a loss of time and efficiency is not only detrimental to the individual, but is also a loss to the community. Why should we aid in the preservation

\* Hollopeter, W. C.: "Hay Fever, Its Prevention and Cure," New York, 1916.



and spread of a plant of such propensities, even if it is good to look upon? Rather it should be classed with the ragweed and every effort should be made to stamp it out, at least in the neighborhoods of our cities. If we do not care to eliminate the goldenrod from the national flower contest because of thoughtfulness of our friends and neighbors who suffer from its existence, let us do so merely from the efficiency standpoint, both individual and state.

**BRAVERY OF NEW YORK NURSES.**—A unit of nurses who entered the service in May, 1917, under the auspices of the Presbyterian Hospital of New York, has returned home. Twenty-two of these nurses, who saw service at Chateau-Thierry, St. Mihiel, and in the Champagne district, part of the time under fire, and who were with the army of occupation in Germany, have received citations from General Pershing for extraordinary bravery. The Presbyterian unit operated the army hospital at Etretat, France, with 2,000 beds, ministering to thousands of American wounded.

**PRaise FOR AMERICAN HOSPITALS.**—Lieutenant-Colonel Richard C. Cabot, who returned recently from service abroad, has spoken with praise of the American hospitals in France. The unit with which Dr. Cabot served arrived in France four months after the United States entered the war. The American Expeditionary Forces numbered less than 50,000 men when it began to establish Army Base Hospital No. 6 at Bordeaux for the reception of American wounded. It carried on its work of preparation for months before the American Army entered active service, and nothing was lacking in the hospital equipment. In speaking of the excellent character of the service rendered by the hospital, Dr. Cabot is reported to have said:

It was not necessary to wait hours for the attendance of a specialist at a consultation, as is the case sometimes at hospitals on this side. A consultation over a serious case could be called in five minutes. Every sitting at the officers' mess was a potential consultation on the most severe cases in the hospital. Other American hospitals undoubtedly were in position to give service to the American wounded of equal excellence.

We were disappointed when we were assigned to Bordeaux. We thought it was too far from the front. But we are gratified now that we were assigned there. We established a base hospital at the terminal of the lines of communication. When we received patients we had no one to pass them along to—we kept them for the full course of treatment. We did just the thing we

were trained to do and that we had hoped to do.

Some of the worst wounded came to us. The facilities for evacuating the wounded to the rear were excellent. The hospital trains kept us within two days of the front.

When the offensive of July started we began our first real war work. The wounded were coming to us at the rate of 500 every two days. We were rushed night and day—but we were organized and equipped to handle the rush with facility and efficiency.

In the early days, too, when our only patients were the ill from the Army, doctors and nurses were detached for periods of training and experience with the British Medical Corps. Nearly all the doctors had a period of this training.

Other detachments were assigned to aid in the Red Cross work of civilian relief. From November, 1917, to March, 1918, I was in charge of a detachment which travelled up and down France, establishing dispensaries and otherwise ministering to the civilian needs. France had no doctors to care for the ill of its civilian population; all the doctors were with the army on the battle line.

I spent much of my time during this period at the Swiss border supervising the return of French refugees from the occupied portions of France.

The unit treated one-sixth of the American casualties. Beside caring for American soldiers, it accomplished a great amount of work in relief of the civilian population in France, and some of its doctors and nurses will remain in Europe to aid in the after-the-war relief. Lieutenant-Colonel Cabot returned to America in advance of his unit because of his duties as professor at the Harvard Medical School. The unit was relieved on January 14, and is now awaiting transportation home. It will probably be back in the United States within a month. Dr. Cabot is the first doctor of the Massachusetts General Hospital to return to this country.

Col. Frederick A. Washburn, superintendent of the Massachusetts General Hospital, who organized the unit and commanded it during its first months of service, is now in England. He was assigned early last summer to command of all American hospitals there.

Col. Warren L. Babcock of Detroit commanded the hospital at Bordeaux from the time Colonel Washburn left until the return of Lieutenant-Colonel Davis from Italy. Accompanying Colonel Washburn to the duty in England were Maj. James H. Means and Capt. William J. Mixer of the original Massachusetts General Hospital unit.

The doctors of the unit who are going to re-

main in Europe to aid in relief work are: Capt. Paul D. White, Lt. Carl A. Binger, Lt. D. S. Clark, and Lt. J. S. Hodgson. These with nurses and orderlies of the unit are assigned to at least six months' service in the Balkans. They answered a Red Cross call for volunteers.

#### BOSTON AND MASSACHUSETTS.

**WEEK'S DEATH RATE IN BOSTON.**—During the week ending Saturday noon, February 15, the number of deaths reported was 262 against 332 last year, with a rate of 17.16 against 22.07 last year. There were 39 deaths under one year of age against 45 last year.

The number of cases of principal reportable diseases were: Diphtheria, 52; scarlet fever, 53; measles, 8; whooping cough, 14; typhoid fever, 5; tuberculosis, 40.

Included in the above were the following cases of non-residents: Diphtheria, 11; scarlet fever 4; tuberculosis, 5.

Total deaths from these diseases were: Diphtheria, 6; scarlet fever, 1; whooping cough 1; tuberculosis, 16.

Included in the above were the following non-residents: Diphtheria, 1; scarlet fever 1; tuberculosis, 2.

Influenza cases, 316. Influenza deaths 36, of which 4 were non-residents.

#### INFLUENZA IN BOSTON AND MASSACHUSETTS.

On February 14, 40 new cases of influenza, with 2 deaths, and 7 new cases of pneumonia, with 4 deaths, were reported to the Boston Health Department.

On February 15, 40 cases of influenza and 9 of pneumonia were reported to the Boston Health Department. Deaths reported numbered 6 of influenza and 2 of pneumonia.

In speaking of the week ending February 15, Acting Health Commissioner Safford is reported to have said:

"In spite of the continuance of influenza as the cause of mortality in Boston, the total deaths for the present week will again fall considerably below last year. A week ago, for the first time since last September, deaths for the week were below those for 1918."

On February 16, 30 cases of influenza and 6 of pneumonia, with 5 deaths from influenza and 11 from pneumonia, were reported to the Boston Health Department. On February 17, there were reported 40 new influenza cases, with 3 deaths, and 7 cases of pneumonia, with 6 deaths.

**APPOINTMENT OF DR. W. R. BLOOR.**—Dr. W. R. Bloor has been appointed professor of biochemistry and head of the division of biochemistry and pharmacology at the University of California. Dr. Bloor was formerly assistant professor of biological chemistry at the Harvard Medical School.

**APPOINTMENT OF LOWELL BACTERIOLOGIST.**—Dr. James Y. Rodger will succeed Dr. Marshall L. Ailing as bacteriologist in Lowell. Dr. Rodger has returned recently from France, where he was a lieutenant in the Medical Corps of the 26th Division.

**APPOINTMENT OF DR. WALTER C. BAILEY TO THE MISSION TO POLAND.**—Dr. Walter C. Bailey of Boston has been appointed at the head of the Red Cross Commission to Poland. Dr. Bailey graduated from the Harvard Medical School in 1898. For three years he was chairman of the board of trustees of the Massachusetts Consumptives' Hospital. At the outbreak of the war he went to Washington and became actively engaged in Red Cross Work, and later went abroad as a member of the Rockefeller Tuberculosis Commission. He established tuberculosis dispensaries at Lyons, France, and worked with Dr. Livingston Farrand. Dr. Bailey was later appointed chief of the medical department of the Rhone.

**HONOR FOR PROFESSOR SELSKAR GUNN.**—Professor Selskar Gunn of the Massachusetts Institute of Technology has been awarded the cross of Chevalier of the Legion of Honor for his extraordinary services in the fight against tuberculosis in France. The award was made by President Poincare of the French Republic upon the recommendation of André Tardieu. Formerly Dr. Gunn was professor of biology at the Institute of Technology. He is now in France as director of the campaign against tuberculosis which is being carried on in France by the Rockefeller Institute.

**FELLOWSHIP FOR PUBLIC HEALTH MEN.**—The Harvard Medical School, in cooperation with the Boston Dispensary, offers a Fellowship to graduates in medicine who desire to pursue a course of study leading to the Certificate of Public Health in the School for Health Officers, or to the degree of Doctor of Public Health in the Department of Preventive Medicine and Hygiene.

Fellows are required to give about half their time to the treatment and supervision of the sick in clinics or their homes for the Boston Dispensary and half their time to study or research at the Harvard Medical School. Appointments made be made for one or two years. The stipend is from \$750 to \$1,000 per year, depending on the details of the arrangement made.

Applications stating previous experience, references, etc., should be made to Dr. Milton J. Rosenau, Professor of Preventive Medicine and Hygiene, Harvard Medical School, Boston, Mass., or to Michael M. Davis, Jr., Director of Dispensary, 25 Bennet Street, Boston.

### The Massachusetts Medical Society.

#### ANTI-VACCINATION.

The Massachusetts Medical Society,  
Office of the President, Worcester,  
February 28, 1919.

Mr. Editor—

The annual attempt to repeal our vaccination laws produces this year the inclosed circular now being sent to members of the Legislature and more or less to physicians and others throughout the State.

I ask you to make it even more public by printing it in your columns and I ask everyone who reads it to read carefully also the statement of the true conditions at the Massachusetts State Antitoxin and Vaccination Laboratory and, after reading it, to "get busy," each in his own district, to see members of the Legislature and refute the statements based on the testimony of the ex-soldier who "became tubercular as a result of vaccination." The careless lay reader might easily conclude that "corpses" of persons dying from smallpox were daily used to inoculate calves, and from the last two paragraphs, that the "slime" was directly injected into the "healthy bodies of public school children." I venture to assert that if the conclusions were drawn, it would not be altogether disagreeable to the "Medical Liberty League."

SAMUEL B. WOODWARD, President,  
Massachusetts Medical Society.

#### HOW STATE VIRUS IS MADE IN AT LEAST ONE OF OUR STATE LABORATORIES.

Described by an eye witness\* in the year nineteen hundred and eighteen.

The calf is supplied to the laboratory by a meat dealer. It is first taken from the stable and given a wash.

The day the creature is to be used for making virus, it is strapped to a table. The head is bound securely down; the front legs are fastened together. The hind legs are separated as far as possible, and held firmly, in order to make the area worked on as large and as free as possible. The calf is then shaved between the front and hind legs, an area about two feet long. About ten or twelve slits are made in the shaved surface, into these slits the vaccine virus seed\* is rubbed, to remain six or seven days.

It is plain to be seen that the animal suffers. It is operated on without anaesthetic. It groans and wheezes, showing its terror by its rolling eyes, panting breath, and quivering flesh.

#### This is vivisection!

For six or seven days after the calf is thus inoculated, it is suspended so that it can touch its feet, but cannot lie down; this suspension is to guard against infection;—infection of an already infected calf! Lice crawl over the sores.

After the six or seven days, the calf is again strapped securely to the table; the swollen, inflamed slits are scraped with a sharp knife, and the filthy contents is put quickly into a bottle and promptly covered—to keep it pure! Later it is ground up in glycerine, and heated to a certain temperature. The students who came to the laboratory for instruction in making virus were told that all the germs could not be killed, but as many were killed as possible. The virus is then cooled to a temperature below freezing, to remain until ready for use.

Virus, according to the Century Dictionary, means: "a morbid poison," "slime or poison." When you come to think of this slime from the corpse of a person dying of small pox, can we go further in filth?

The introduction of this "slime or poison" into the healthy bodies of public school children is compulsory in Massachusetts.

Will you help to repeal this law?

JOIN THE MEDICAL LIBERTY LEAGUE, Inc. Now! Room 205 Kimball Building, 18 Tremont St., Boston, Mass. Annual Associate Membership \$1.00. Telephone Main 2394.

\* It may interest the reader to know that the "eye witness" is an ex-soldier, who served at the Mexican Border, in the Coast Artillery, and was afterward at Camp Devens, and who has suffered the ruin of his health from inoculation and vaccination and has been discharged as tubercular.

Dr. S. Monckton Copeman (Victoria University, Manchester, Eng.) speaking of seed virus, says: "The most satisfactory material was found to be vesicle pulp, obtained in the post mortem room from cases of discreet smallpox that had died during a comparatively early stage of the eruption."

#### HOW VACCINE VIRUS IS PREPARED IN OUR STATE LABORATORY. STATEMENT OF DR. A. N. ALLEN, ASSISTANT DIRECTOR.

The calf to be used for propagation of vaccine virus is kept in quarantine for at least one week before it is vaccinated, to insure its being in perfect health. A tuberculin test is made at this time on every calf to rule out bovine tuberculosis.

**Tuberculin Test.**—On first day, the temperature of calf is taken in the forenoon, at noon, and in the afternoon. At 10 P.M. 1 c.c. of tuberculin (from Bureau of Animal Industry, Washington, D. C.) is injected subcutaneously.

On the second day, temperatures are taken every two hours from 8 A.M. to 6 P.M. A marked elevation of temperature (103 or higher) is a positive test. A calf showing a positive reaction is not used for vaccination.

If the calf is healthy, it is washed with soap, water and brushes, and long hair, which could hold dirt, is clipped off. This is done a day or two before vaccination. Then the calf is brought into a clean stall in a clean stable where it is kept as clean as possible during the entire period, until vaccine pulp is collected. The calf is now fed on sterilized hay and milk to keep alimentary canal as clean as possible. The calf is prevented from lying down during development of vaccine eruption (5 or 6 days) by means of a canvas sling (sterilized). A sterile cloth apron is placed over the vaccinated area as additional protection against soiling. The forenoon and afternoon temperature record of each calf is kept throughout the period of observation. This is a means of watching the health of the animal.

**Process of vaccination.**—Before operation, the calf's feet are washed with sulpho-naphthol, carefully inspected, and sterile stockings placed on hind feet. The calf is placed on a special operating table and rules of surgical asepsis are observed throughout operation. Skin of abdomen and inside thighs is shaved.

This area is then cleansed with utmost care and thoroughness by sterile water, sterile castile soap solution, sterile brushes, then thorough irrigation with sterile water. The area is then dried with a towel and followed by 70% alcohol. This procedure is repeated three times.

For vaccination, longitudinal superficial scratches are made on the shaved area, about 1 cm. apart, and seed vaccine is applied to each scratch as it is made. When the operation is finished, the calf is placed in a sling in the stable, as before stated. When the eruption has developed (5 or 6 days) it is removed on the operating table with a curette.

Vaccine eruption appears as elevated ridges of whitish vesicular tissue along the original scratches. There is no marked reddening of skin and no swelling.

The curetting is done under rules of surgical asepsis. The entire field is cleansed three times, as previously described, excepting that alcohol is not used, as this might injure the vaccine. Sterile towels are placed about area. The calf is then chloroformed during process of curetting. The pulp is transferred to a sterile glass dish and immediately placed in a freezer to prevent multiplication of bacteria.

The calf is never chloroformed to death at time of taking off the vaccine.

On the following day the calf is autopsied to make a final assurance of its normal condition. If any pathological conditions are present at autopsy, the vaccine is discarded. The vaccine is used if no pathological lesions are found.

The pulp is further treated by mixing it with 50% sterile glycerine (pulp 1 part, glycerine 4 parts) and it is then ground in a sterile glass grinder. The finished product is a fine suspension of vaccine pulp in glycerine. This is stored for several months in a freezer, before distributing. During this time the extraneous bacteria are slowly eliminated by the glycerine. Meanwhile its purity is tested by two sets of seven bacteriologic tests—one set of tests by Dr. Rosenau; the second set by Dr. Reagh. These two sets serve as checks on each other. Potency tests are also made on each lot.

**Tests made on vaccine.**—(1) Agar plate culture is made with a known dilution of vaccine and the number per c.c. of bacteria in vaccine is calculated.

(2) One-fourth cubic centimeter of vaccine is injected subcutaneously in a guinea-pig. The animal is observed for a month. This test is for any pathogenic organism.

(3) One-fourth cubic centimeter of vaccine is added to sterile whole milk. This is a test for the gas bacillus.

(4) One-fourth cubic centimeter is added to a fermentation tube of unfermented bouillon containing sterile guinea-pig tissue (kidney).

(5) One-fourth cubic centimeter of vaccine is added to a fermentation tube of dextrose bouillon (1% dextrose).

(6) One-fourth cubic centimeter is added to a fermentation tube of dextrose bouillon. This is heated to 60° to 65° C. for one hour. All bacteria, excepting spore-bearers, are killed by heating.

(7) One-fourth cubic centimeter is added to a fermentation tube of unfermented bouillon.

In tests 4 to 7, after 9 days incubation,  $\frac{1}{4}$  c.c. of fluid from the fermentation tube is injected subcutaneously into a mouse and the animal observed for a month. These tests (4-7) are made especially for tetanus.

After tests are complete and satisfactory the vaccine virus is further diluted for use, filled into sterile glass capillary tubes by vacuum, the tubes sealed by flame, packed in sterile glass containers and distributed in mailing cases.

"Cow-pox virus is the virus used in vaccinating the calves for production of small-pox vaccine."—Dr. Arthur Reagh. ARNOLD N. ALLEN, Asst. Director, Massachusetts State Antitoxin and Vaccine Laboratory.

#### SOCIETY NOTICE.

MASSACHUSETTS THERAPEUTIC MASSAGE ASSOCIATION.—The next meeting will be held at the Hotel Brunswick, at 8 P.M., Tuesday, March 11, 1919. Business meeting at 7.45 P.M.

DR. ANDREW P. CORNWALL, orthopedic surgeon, Massachusetts General Hospital, will address the Society on "Lame Backs: Their Diagnosis and Treatment."

Members of the medical profession are invited.

DOUGLAS GRAHAM, President.

MISS AGNES J. KEER, Secretary.

#### RECENT DEATHS.

EDWARD FRANCIS PHELAN, M.D., a Fellow of the Massachusetts Medical Society, died of disease in France, while in service as Captain M.R.C., U.S.A., December 9, 1918, aged 32. His home was in North Brookfield. He was a graduate of the University of Vermont in 1909 and joined the Massachusetts Medical Society in 1912.

LEWIS HENRY PLIMPTON, M.D., of Norwood, died in Boston suddenly, February 21, 1919, aged 66 years. He was a native of Walpole and was educated at Phillips Exeter, Harvard College in the class of 1875, and graduated from Harvard Medical School in 1878. He was an interne at Boston City Hospital and had practiced in Norwood until 1910. He had been a member of the Massachusetts Medical Society since 1879. He is survived by his widow, who was Alice H. Morrell.

DR. GEORGE R. CADE, of Brighton, Massachusetts, died recently at the age of fifty-two as a result of an accident. Dr. Cade was born in Northwood, N. H., and received his degree from Bates College. For twenty years he had practiced medicine in Maine and in Haverhill, Massachusetts. At the time of his death he was medical director of the Flak Hospital, Brighton.

DR. SANTOS MOREIRA, a pediatricist of Rio de Janeiro, and director of the *Medicina Clinica*, and DR. PAULO SILVA ARAUJO, a leading microbiologist, who published, in 1915, "Vaccine Therapy of Bronchial Asthma," died recently, in Brazil, of influenza.

DR. RICHARD ERNEST KUNZE died at Phoenix, Ariz., on February 10. He was born in Saxony. He practiced medicine in New York until he went to Arizona in 1896. There he established a cactus farm and studied medical botany and insect fauna of Arizona, and became an extensive exporter of cacti to the botanical gardens of the world. At one time Dr. Kunze was president of the New York Therapeutical Association.

CLINICAL CHART OF RENAL DISEASES.—The Clinical Chart of Renal Diseases accompanying the article by Dr. H. S. Jellalian, published in the issue of the JOURNAL for Jan. 2, 1919, has been reprinted in convenient form for the use of physicians and medical students, and may be had at the JOURNAL office for twenty-five cents a copy.

BACK NUMBERS WANTED.—The JOURNAL will be very glad to purchase the following numbers if in good condition for binding: June 20, 1916; February 1, 1917; May 3, 1917; June 28, 1917; November 1, 1917; November 8, 1917.